

FLIGHT

The
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ENGINEER
&
AIRSHIPS

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CONTENTS

	PAGE
Editorial Comment :	
The Latest Atlantic Flight	365
A Contrast	366
Air Racing	366
Birthday Honours	366
Bournemouth Whitsun Meeting	368
New York-Berlin (Nearly)	375
The Ryan Monoplane Described	376
Private Flying	380
Light 'Plane Clubs	381
Airisms from the Four Winds	382
Avia Machines at Prague Show	383
Royal Air Force	385
In Parliament	386
Personals	386
Air Ministry Notices	386

EDITORIAL COMMENT.



The latest Atlantic Flight

NON-STOP flights across the Atlantic look like becoming everyday occurrences. Lindbergh made one a short time ago. Chamberlin and Levine have just made another. Byrd is contemplating one shortly—and so we go on. In fact, there seems to be a veritable epidemic of "Atlantitis." Under the circumstances one is justified in referring to Chamberlin's flight as "the latest." In fact, one must, since it cannot be adequately identified by terming it "the great Atlantic flight," even if one does so regard it. How far Comdr. Byrd intends to go we do not know. But if the distances continue to increase at the present rate (and frequency), the time is not far distant when it will be necessary for Americans looking for new worlds to conquer, so to speak, to take off from California and alight at Moscow, or even Peking.

Seriously, the flight made by Chamberlin and Levine was a magnificent one, and it was sheer bad luck that they were not able quite to reach Berlin. Not that the extra hundred miles or so makes any appreciable difference to the merits of the flight, but there is something impressive in the "capital-to-capital" idea (with apologies to Washington). For all that, to have covered close upon 4,000 miles, mostly over the sea, is a performance which bears testimony not only to the courage, endurance and determination of the crew, but also the qualities of the machine and, most of all, the reliability of the engine. One is justified in being a little sceptical in a case where a certain type of engine has made one very long flight. The element of luck may have played a not inconsiderable part. But when the same type of engine continues to pile up record upon record, the probabilities are that it really is a thoroughly reliable engine; and not only reliable, but also economical in fuel consumption. Such an engine undoubtedly is the Wright "Whirlwind." Three of these were fitted in Byrd's Fokker on which he and Bennett flew to the North Pole and back. (Cynics might say that fitting

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For Sizes and Prices, see Advert., page xxii.

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

1927

- June 4-16.... Fourth International Aero Exhibition, Prague.
- June 11 Newcastle Aero Club Flying Meeting
- June 18 Inst.Ae.S. Visit to Croydon Aerodrome.
- June 30 Aviation Ball at May Fair Hotel
- July 2 Royal Air Force Display.
- July 9 Air League Challenge Cup at Castle Bromwich, Birmingham.
- July 30-.... Bournemouth Meeting (including King's Cup Race).
- Aug. 10-12 Navy v. R.A.F. Cricket Match.
- Aug. 20-....
- Sept. 2 International Aero Exhibition, Copenhagen.
- Sept. 10 Gordon-Bennett Balloon Race, Denver, U.S.A.
- Sept. 25 Schneider Trophy Race at Venice.
- Oct. 20 Aero Golfing Soc. (Cellon Cup), Walton Heath.

three engines was trebling the chances of something going wrong!) Then Chamberlin, on the Bellanca monoplane, raised the world's duration record to 51 hours 10 minutes. Next, Lindbergh crossed from New York to Paris in about 34½ hours in the Ryan monoplane. And now Chamberlin and Levine have flown, in the Bellanca, from New York nearly to Berlin in 42 hours or so. In all cases the Wright "Whirlwind" was the engine fitted. It would even appear possible that the engine used in the latest Atlantic flight is the identical one which established the duration record, although this cannot be stated for certain at the moment. In any case, the world must take off its hat to Chamberlin and Levine, and to the Bellanca monoplane and the Wright engine.

A Contrast In marked contrast to the reception given to Lindbergh (a reception which was, of course, thoroughly well deserved) was that, or rather the lack of that, given to Flight-Lieuts. Carr and Gillman upon their return to London on June 7. They were met at the station by representatives of the Air Ministry, the R.A.F., the Hawker and Rolls-Royce firms, and a few friends. The reception was very quiet and informal, and the general public was totally unaware of the return of the two officers. Carr and Gillman did not, it is true, succeed in reaching their objective, and so the recognition which follows success was denied them. But, at any rate, we of the aircraft fraternity should not let our eyes be blinded to the fact that Carr and Gillman did accomplish something which was distinctly meritorious. They flew a distance which, although somewhat shorter than had been hoped for,

was far in advance of anything that has ever been done by a British aeroplane before. There are such things as "glorious failures," and Carr and Gillman's flight was by way of coming in that category. But they are R.A.F. pilots, and the flight was regarded as purely a Royal Air Force experiment. Therefore but little is being said about the flight. That it will have taught not only the constructors of the machine and engine something, but also the R.A.F., may be taken for granted, and, after all, it was a first attempt. There is another "Horsley" and many "Condors" in existence. Who knows but what that combination may not yet command success? In the meantime, we should thank Carr and Gillman for their gallant effort.

Air Racing

The very sad accident which took place during the Bournemouth Whitsun meeting inevitably brings up the problem of number of starters in relation to length of course. A great number of machines undoubtedly adds to the attraction of air racing, but it has become quite evident that for a given course the number of machines must be limited, otherwise the risk becomes unduly great. The new Bournemouth course necessitated 11 turnings, as compared with five for the old course, for the same distance of 10 miles. With 12 or more machines, separated at the start by seconds only, and at the finish, theoretically, by nothing, so many turns must mean bunching on corners, and it is really a wonder that accidents have not happened before. The whole subject of air racing will have to be thoroughly studied if a sport which is just beginning to get popular is not to be doomed at the very outset.

BIRTHDAY HONOURS

THE official list of honours conferred by His Majesty the King on the occasion of his 62nd birthday on June 3, includes the following:—

Order of the Bath

K.C.B. (Military Division)

Air Vice-Marshal Henry Robert Moore Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., R.A.F.

Order of the British Empire

(Military Division)

C.B.E.

Miss Joanna Margaret Cruickshank, R.R.C., Matron-in-Chief, Princess Mary's R.A.F. Nursing Service.

O.B.E.

Squadron Leader Arthur Travers Harris, A.F.C., R.A.F.

Squadron Leader Arthur Trafalgar Williams, R.A.F.

Squadron Leader William Boston Cushion, R.A.F.

M.B.E.

Flying Officer Allan Lanman, A.F.C., R.A.F.

Flying Officer Graham Stuart Smith, R.A.F.

Flying Officer Frank Henry Whitmore, D.S.C., R.A.F.

2436 Sergeant-Major, 2nd Class, William Webster, R.A.F.

(Civil Division)

G.B.E.

Lieutenant-Colonel the Right Hon. Sir Samuel John Gurney Hoare, Bt., C.M.G., M.P.

C.B.E.

James Molony Spaight, Esq., O.B.E., LL.D., Assistant Secretary, Air Ministry.

O.B.E.

Franklyn Leslie Barnard, Esq., A.F.C., Pilot under Imperial Airways, Ltd.

Henry Albert Cox, Esq., Education Officer, Air Ministry.

Charles Francis Wolley Dod, Esq., Pilot under Imperial Airways, Ltd.

Ernest Livingstone Johnston, Esq., A.F.C., Assistant Royal Airship Works, Cardington.

Major Rupert Ernest Penny, Principal Technical Officer, Air Ministry.

M.B.E.

William John Harris, Esq., Civil Assistant, Royal Air Force Stores, Kidbrooke.

Flight-Lieutenant (Retd.) Frederick James Hooper, Technical Officer, Royal Aircraft Establishment.

British Empire Medal

Medal of the Military Division. For Meritorious Service

780, Sergeant (now Flight Sergeant) George Wallace Hepple.

159387, Corporal (now Sergeant) William Joshua Leslie Brown.

330130, Aircraftsman, 2nd Class, William Howson.

Air Force Cross

Squadron Leader Harry George Smart, O.B.E., D.F.C.

Flight-Lieutenant Gerard Stephen Oddie, D.F.C.

Flying Officer Ardley George Pickering.

Air Force Medal

157333, Sergeant (Pilot) George Edward Lowdell.

The Flight to Delhi

Awards in recognition of the distinguished service rendered to aviation by their recent flight in a light aeroplane from London to Delhi:—

Air Force Cross

Bernard More Troughton Shute Leete (Flying Officer, Reserve of Air Force Officers).

Thomas Neville Stack (Flying Officer, Reserve of Air Force Officers).

Flight to Solomon Islands

Awards in recognition of distinguished services rendered on the recent seaplane flight from Melbourne to the British Solomon Islands and back:—

C.B.E. (Military Division)

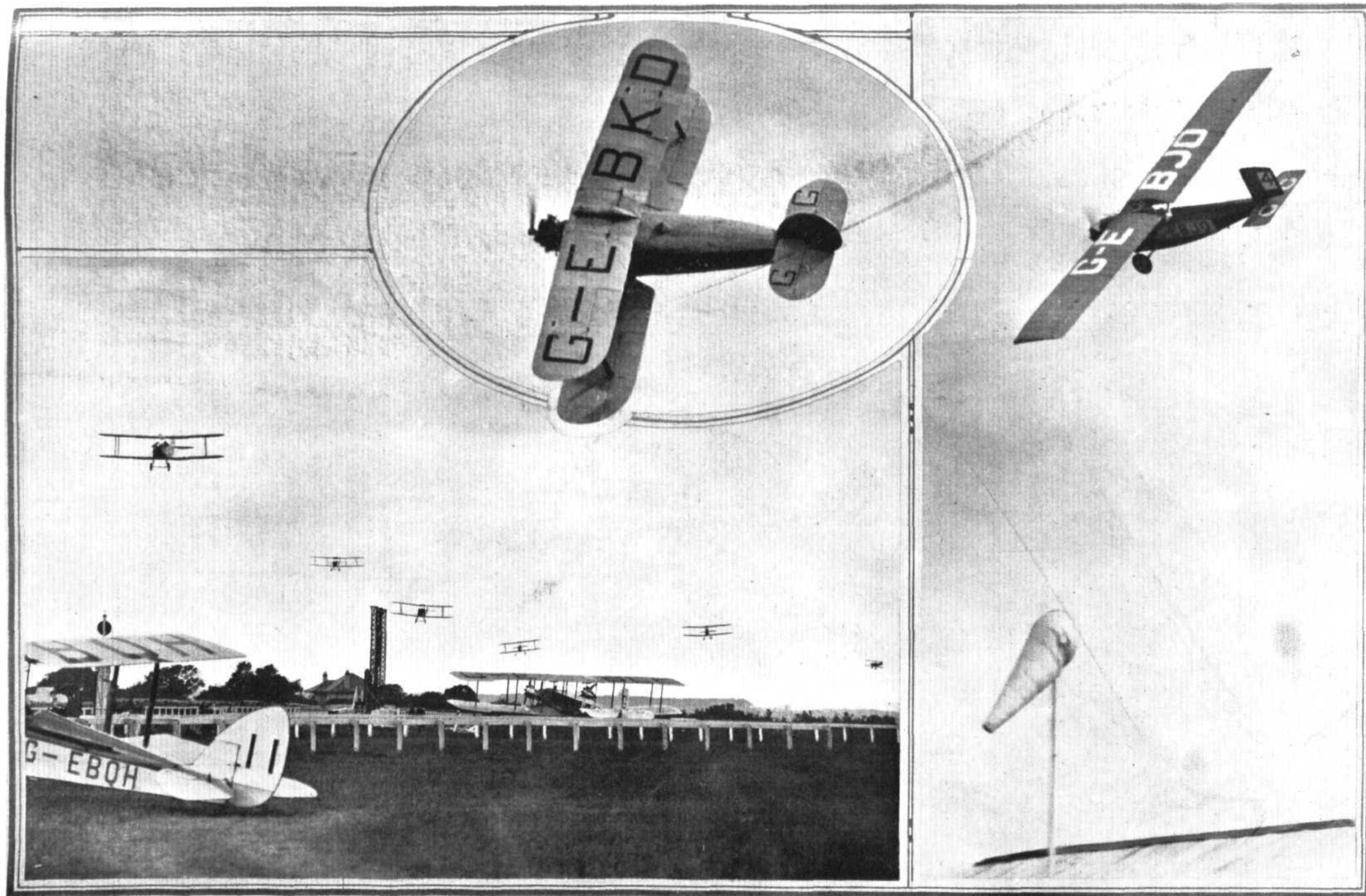
Group Captain Richard Williams, D.S.O., O.B.E., A.D.C., Chief of the Air Staff, Royal Australian A.F.

Bar to Air Force Cross

Flight-Lieutenant Ivor Ewing McIntyre, C.B.E., A.F.C., Royal Australian A.F.

Air Force Medal

Corporal (Acting Sergeant) Leslie Joseph Trist, Royal Australian A.F.



THE PRIVATE OWNERS' HANDICAP: The machines are here seen approaching the aerodrome turning point at the conclusion of the second lap. Mr. Norman Jones was so far ahead as to be out of the picture. The others are, in the order given—Longton, on the "Bluebird," de Havilland on "Moth" NO, Col. Sempill on D.H. 51, Hinkler on his "Avian," Lady Bailey on her "Moth," PU, and Scroggs on the Westland "Woodpigeon." Above, Longton making a turn on the Blackburn "Bluebird," and on the right Jones cornering on the ANEC II.

["FLIGHT" Photographs]

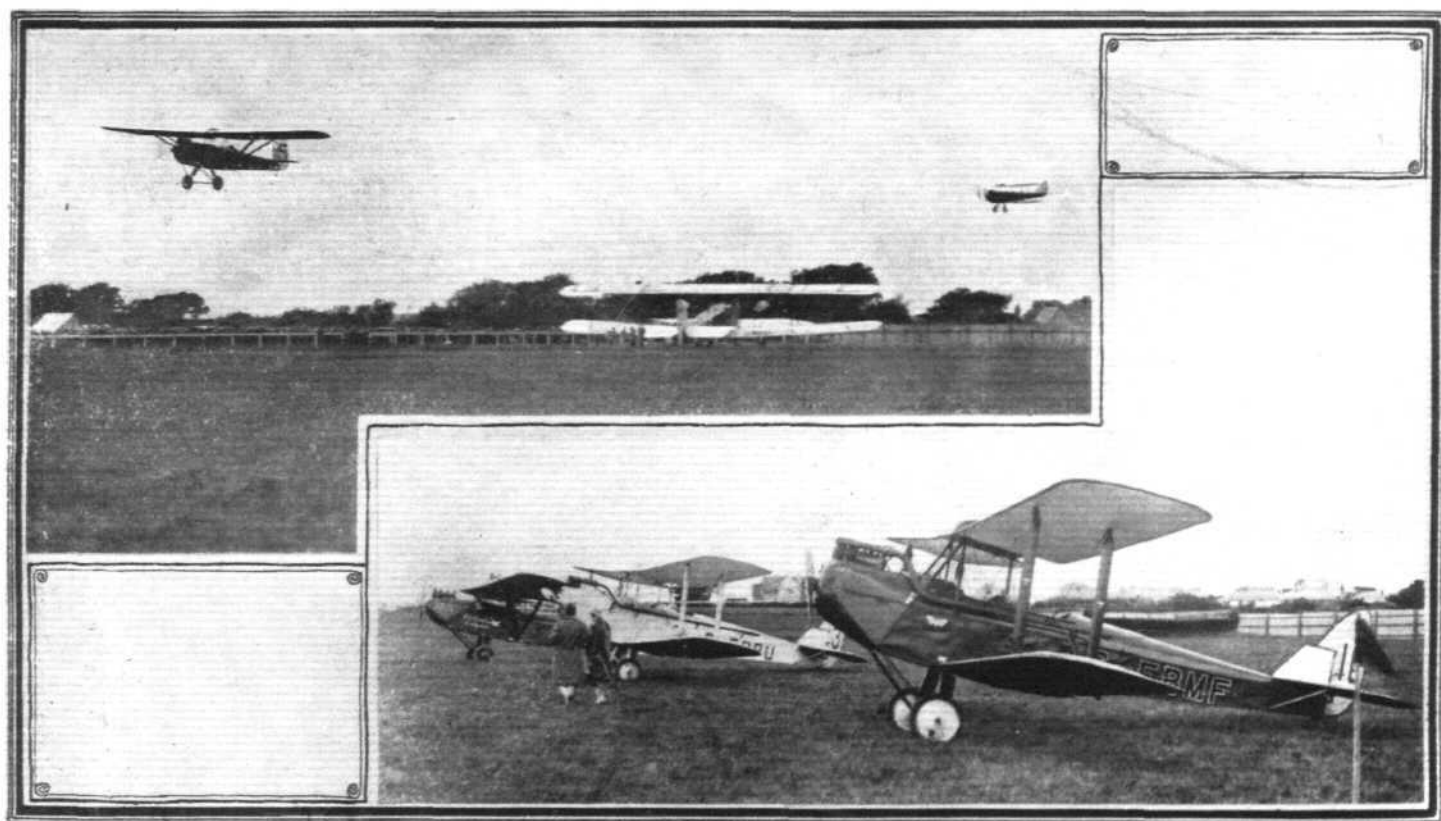
THE BOURNEMOUTH WHITSUN MEETING

Organised by the Royal Aero Club

Bournemouth, Saturday, June 4.—Tragedy cast its shadows over the aerodrome at Ensbury Park race course this morning, already before the Bournemouth Whitsun Meeting had commenced, a serious crash having occurred during the morning, which was later to prove fatal to the passenger of the machine involved, and which resulted in injuries to the pilot. The writer of these notes did not witness the accident, but accounts collected from a number of eye-witnesses appear to indicate that what happened was as follows. Major H. Hemming, Managing Director of the Aircraft Operating Company, was taking off for a test flight in Mr. Alan Butler's De H. 37 (300 h.p. A.D.C. "Nimbus"), with Mr. Claude St. John Plevins as passenger. Almost immediately the machine began to climb it appeared to sideslip, and commenced a left-hand turn. All might have been well, had it not been for a metal girder framework in front of the enclosures. This obstacle, which forms the scoring board during the races,

end. Somehow, although there were numerous entries, and some excellent piloting, the end of the day left one with a feeling of disappointment. Doubtless the morning's tragedy may have had something to do with this, but even apart from that there was an absence of life and go about the meeting which was aggravated by long waits between events, during which nothing happened, and we are more certain than ever that in the future different programmes will have to be arranged if the interest in flying meetings is to be maintained.

The first race of the day, which started some 5 mins. late, was the *Low Power Handicap* for machines fitted with engines not exceeding 1,500 c.c. capacity. Of the six machines originally entered for this event, only four started. These were a De H. 53 with Bristol "Cherub" engine (G-EBQP), flown by Flying Officer McKenzie Richards (Scratch), the Halton biplane, Bristol "Cherub" (G-EBOO), piloted by Flight-Lieut. Trench, 12 secs.; the C.L.A.4 biplane, Bristol



["FLIGHT" Photographs]

THE RACE FOR THE LADIES' PURSE : The lower photograph shows the three machines lined up for the start, while above Mrs. Elliott-Lynn is seen winning the race on the Westland "Widgeon III" monoplane, with Miss O'Brien second on "Moth" MF.

caught the end of one of the wings, which was torn away by the impact and left hanging on the framework, the machine of course swerving sharply to the left, and crashing into some wooden railings in front of the enclosures, tore these up for a distance of several yards, the machine ultimately crashing into the ground. The engine was torn away from the rest of the wreckage, and the machine itself, a tangled mass of wood and fabric, was lying upside down. Fortunately, the dreaded fire did not occur, and it was possible to extricate the two occupants, who were rushed off to hospital. For a time it was feared that both might succumb to their injuries, but although Mr. Plevins died later, the latest reports are that Major Hemming was not as seriously injured as was at first supposed, and is considered now to be out of danger. No bones were apparently broken, but Major Hemming received injuries to head and face, and it is gathered that there is considerable risk that he may lose the sight of one eye.

After this very sad beginning, it would have required a very brilliant meeting to overcome the gloom which the morning's tragedy had cast over the proceedings, and it must be admitted at once that the day's events did not succeed in achieving that

"Cherub" (G-EBPB), flown by Flight-Lieut. Comper, 26 secs.; and the A.N.E.C. II monoplane, Bristol "Cherub" (G-EBJO), Norman Jones, 40 secs. The De H. 53 forged ahead at great speed, and came in well ahead of the others, but appeared to come in from the wrong direction. Comper on the C.L.A.4, came second, with Jones, on the A.N.E.C., third, followed closely by Trench on the Halton biplane.

The second race of the day was open to lady pilots only, and two out of the five machines entered for this race were non-starters. The three starters were Miss S. O'Brien, on the De H. "Moth" (MF), with Cirrus "Mark I" engine; Lady Bailey, on her "Moth" (PU), Cirrus "Mark II"; and Mrs. Elliott-Lynn, on PW, the Westland "Widgeon III" monoplane, Cirrus "Mark II." The machines started in the order indicated, Miss O'Brien being "limit man," and Mrs. Elliott-Lynn scratch. All three handled their machines excellently, making very good turns at the aerodrome turning point, those of Mrs. Elliott-Lynn being particularly good, and practically vertical. The race was won by Mrs. Elliott-Lynn, with Miss O'Brien second, and Lady Bailey third.

It was stated above that Saturday's meeting was dull

because there were no items to relieve the waits between races. This is not strictly true, since three Gloster "Gamecocks" from No. 43 Squadron, Tangmere, had been lent by kind permission of the Air Council to give exhibitions of stunt flying in formation. The three pilots were Flight-Lieut. C. R. Smythe (Leader), Flying Officer (Lieut. R. N.) C. W. Byas, and Sergeant Pilot E. P. H. Wells, D.F.M. At the end of this race, these three machines took the air and gave a wonderful demonstration of what intensive training can accomplish in perfect synchronisation of eye, brain and hand. The flight did loops, rolls and spins in formation, and although the exhibition greatly delighted the comparatively few spectators who visited the aerodrome, it is really unlikely that anyone there, except perhaps the pilots, fully appreciated what the manoeuvres meant in the way of skilful piloting. The ordinary person can have no conception of the perfect sense of time and speed which is required in order to avoid collision during such evolutions.

"It is an ill wind . . ." etc., proved a true saying in the third event today, the *Private Owners' Handicap*, for which no less than 13 machines had been entered. One shudders to think what would have been the result of 13 machines crowding round a 3½ miles' course which had to be rounded three times, involving no less than 11 turns around turning points, most of the machines being fairly evenly matched and, therefore, close together. As it was, four S.E.5's that had been entered were all out of commission for one reason or another, and did not turn up at Bournemouth at all. A D.H.53 with Blackburne "Tomtit" engine was also an absentee, while the D.H.51 had been completely wrecked during this morning's crash. This left seven machines to face the starter, these being, in the order of starting: Jones on ANEC II (JO), Scroggs on Westland "Woodpigeon" (IY), Longton on Blackburn "Bluebird" (KD), Lady Bailey on "Moth" (PU), de Havilland on "Moth" (NO) (the last two starting together), Hinkler on "Avian" (OV), and Sempill on D.H.51 (IQ) (scratch). During the first two laps the machines were fairly well strung out. It was generally considered to be Col. Sempill's race, but Hinkler flew a magnificent race, cutting under Col. Sempill just before reaching the aerodrome turning-point (having, presumably, been overtaken out in the country). There was only three seconds' difference between the starts of these two machines, and betting was brisk. The second time around Hinkler and Sempill rounded the aerodrome turning-point together, with Hinkler underneath, and when the machines finished on the



["FLIGHT" Photograph
SECOND IN RACE FOR LADIES' PURSE: Miss S. O'Brien in the "Moth" which she handled so well.

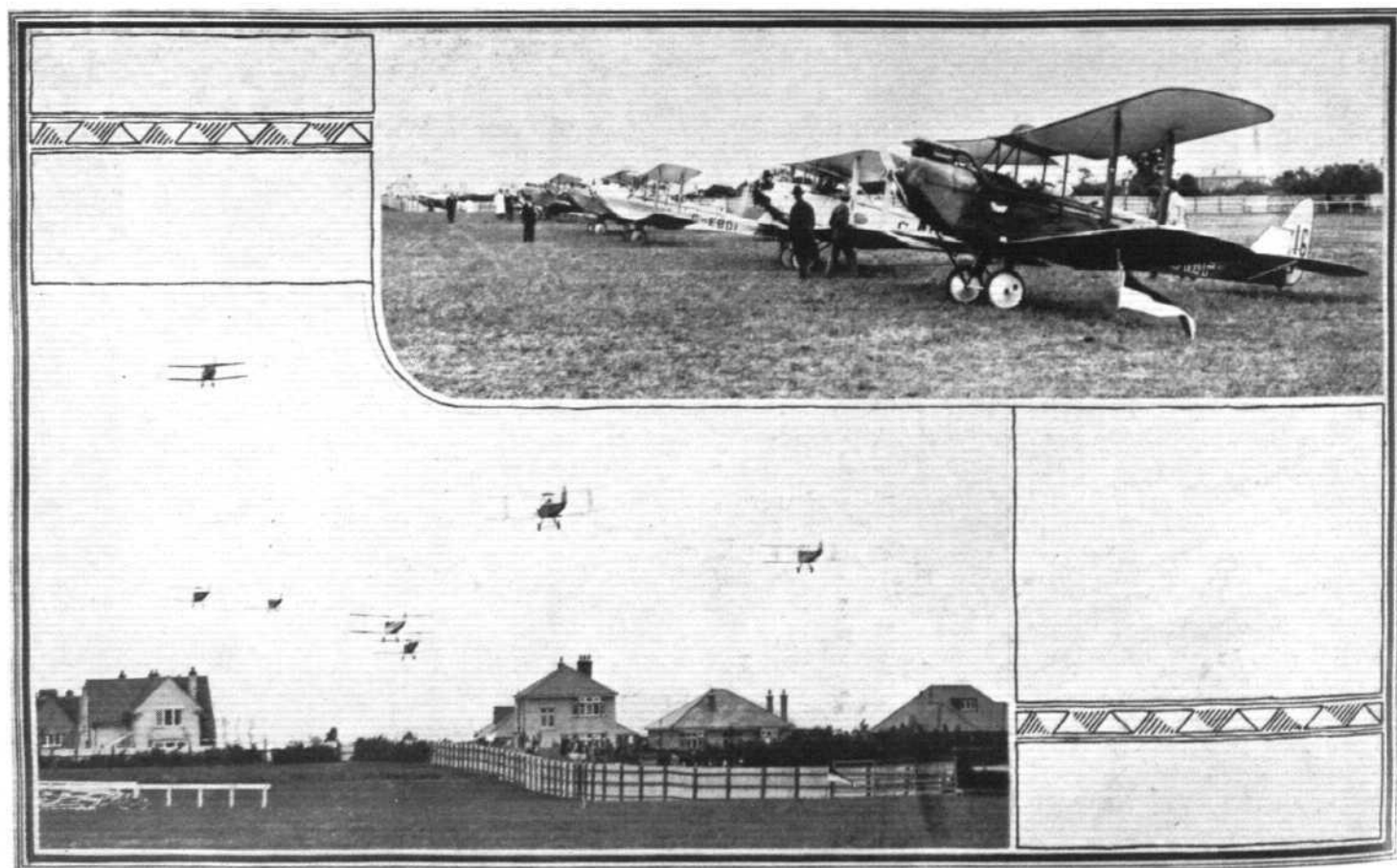


["FLIGHT" Photograph
TWO "MOTHS": Pope on PR leading Broad on QH in Hotels Association Sweepstake, first heat.



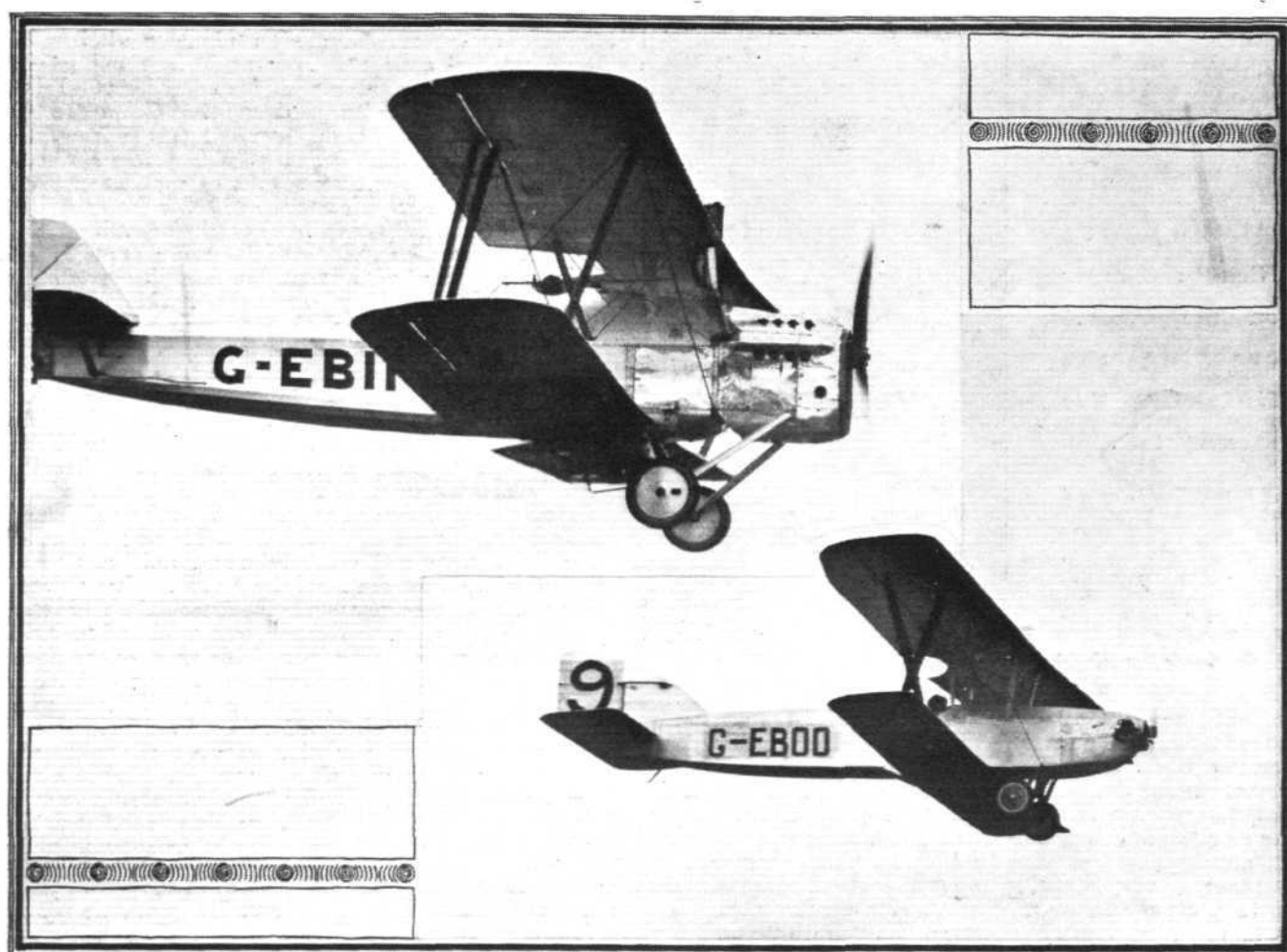
[" FLIGHT " Photograph

TWO, " AVIANS " : Watt on QL just beats Gray on QN in the second heat of Hotels Association Sweepstake. The final of this race was also won by Watt, with Gray third.



[" FLIGHT " Photographs

AN ILL-FATED EVENT : The first race on Whit Monday was a Medium Power Handicap. The upper photograph shows the 12 machines lined up for the start, while in the upper some of them are seen leaving the aerodrome on the last lap. Longton on the " Bluebird " is seen in the top left-hand corner.



[“FLIGHT” Photographs]

DAVID AND GOLIATH : Considerable amusement was caused at Bournemouth on Whit Monday by a heat in which the Halton "Mayfly" (30-h.p. Bristol "Cherub") was racing against the Vickers "Vixen III," (500 h.p. Napier "Lion").

third round Hinkler just managed to win. He well deserved it. Col. Sempill was second, with Norman Jones on his ANEC third.

Event 4 on this afternoon's programme was the first heat of the *Bournemouth Hotels Association Sweepstake*. Originally 13 machines had been entered, but the scratching of two S.E.'s reduced the number of starters to 11, which was more than sufficient. The starters were, in the order of taking off: Jones on his ANEC, and Trench on the Halton "Mavfly".

(together), Richards on the D.H.53, Terrell on "Moth" MF, Lady Bailey on her "Moth" PU and Pope on "Moth" PR (together), Broad on "Moth X" (QH), Openshaw on Westland "Widgeon" (PW), Hinkler on "Avian" (OV), Sempill on D.H.51, and Leach on Vickers "Vixen" (IP) (scratch). The limit man received but 4 mins. 19 secs. start, so that it will be realised that the machines were often uncomfortably close together during the race. Leach started off just as Terrell rounded the aerodrome turning-point, the first three



The End of a Far From Perfect Day: Squadron Leader Rea winning the Final, on the Boulton and Paul P.9, of the Bournemouth and District Business Houses Sweepstake.

[“ FLIGHT ” Photograph

["FLIGHT" Photograph]

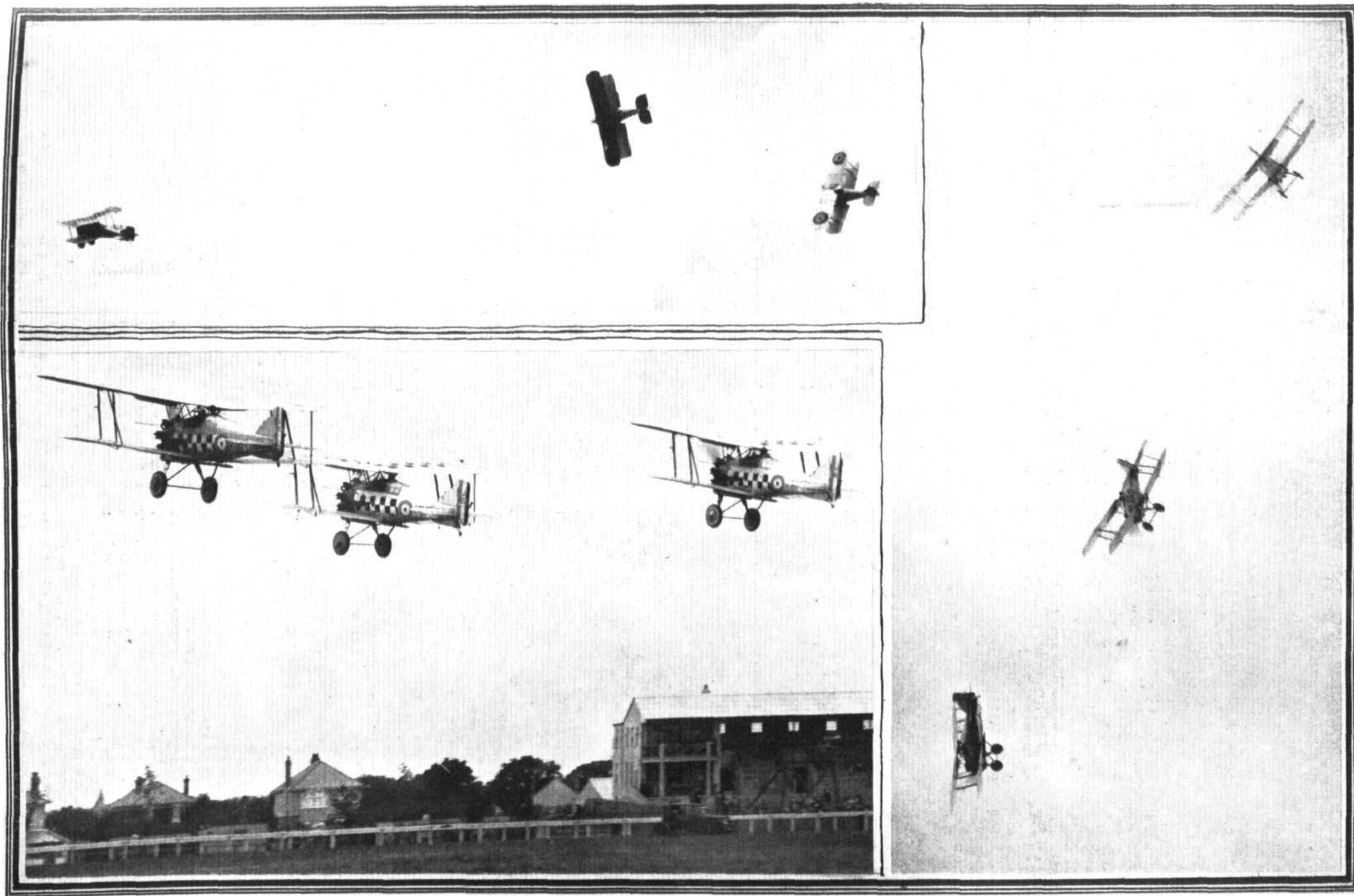


The Final, the last race of the day, was composed of the first three from the two heats, as follows : Trench on " Mayfly," Terrell on " Moth " MF, Rea on P.9 (all three from first heat), Gray on " Avian " QN, Watt on " Avian " QL, and Openshaw on " Widgeon III " PW (scratch). The Westland crew did a

The first event on the programme this afternoon was a *Medium Power Handicap*, for machines fitted with engine weighing not less than 185 lbs. and not more than 285 lbs. Twelve entries had been received for this race, and 12 machines started. These were, in the order of taking off, Sparks on "Moth" MF, Longton on "Bluebird" KD, Courtney on "Moth" OI, Pope on "Moth" PR, and de Havilland on "Moth" NO (together), Lady Bailey on "Moth" PU.



[" FLIGHT " Photograph



FORMATION-FLYING EXTRAORDINARY: During the Bournemouth Whitsun Meeting a flight of Gloster "Gamecocks" with Bristol "Jupiter" engines gave some wonderful exhibitions of stunting in formation. They are here seen taking off and carrying out various evolutions.

Greig on "Genet-Moth" OU, Gray on "Avian" QN, Watt on "Avian" QL (together), Broad on "Moth X" QH, Hinkler on "Avian" OV, and Openshaw on "Widgeon" PW (scratch). With so many machines starting together, there was trouble at the very outset, and collisions during the actual take-off were narrowly averted. However, all machines got away safely, but as they returned from the first lap they were uncomfortably close together, and considerable "bunching" took place at the aerodrome turning point. Sparks was in the lead, with Longton second. At the other end Openshaw had overtaken Hinkler. All the way around the course the machines were flying very close together, passing one another as the faster overtook the slower. On finishing the second lap Courtney had taken the lead from Sparks. Hinkler was still last, but Openshaw had overtaken Broad, and was rapidly gaining on other machines in front of him.

It was during this that disaster, swift and complete, overtook two of the pilots. From the aerodrome those who happened at the time to be looking towards one of the field turning points, suddenly saw a machine tilt over, dive and disappear behind the trees. That a collision had occurred was evident, but the distance was too great to make out the identity of the machines involved. Nor was it possible to ascertain this by noting the machines that completed the race, since several competitors, upon seeing the accident, circled around the spot, some landing and others coming back to report. One pilot, on returning to the aerodrome, expressed the opinion that the two machines were the "Bluebird" and the "Widgeon," and after a short wait, during which ambulances were rushed to the spot, this was confirmed. How the accident happened will probably never be definitely ascertained. Several daily papers reported the story of eye-witnesses that the biplane flew into the monoplane. Although naturally impossible to say, this does not appear at all likely. Longton, in the "Bluebird," was much slower than Openshaw in the "Widgeon," and when these two machines passed the aerodrome turning point at the end of the second lap, the following machines were between them: "Moth" PU, "Avian" QL, "Avian" QN (which landed immediately afterwards), "Genet-Moth" OU, and "Moth" NO. Thus, Openshaw would have to overtake these before getting to Longton, or at any rate such of them as had not, themselves, overtaken the "Bluebird." Those who saw the earlier stages of the race will realise how very little it would take to cause a collision. A very slight swerve, or dive, or climb, and disaster was threatening. The fire which broke out immediately the machines struck devoured everything of a combustible nature, and so presumably it will not be possible to deduct anything of value from an examination of the wreckage.

In Longton and Openshaw we have lost not only two excellent pilots but also two extremely popular friends, and to their wives, who were both on the aerodrome when the accident occurred, everyone will extend the most heartfelt sympathy in their bereavement. Mrs. Openshaw, who is a daughter of Mr. R. A. Bruce of Westlands, had only been married a few weeks.

After this tragedy there was little interest in knowing that the race had been won by Courtney on the Hampshire "Moth" OI, with Watt on "Avian" QL second and Hinkler on "Avian" OV third. A meeting was immediately held to discuss whether to abandon the rest of the meeting or to carry on with the racing in a modified form. We gather that the pilots insisted that the number of competitors in each race should be limited, and after a long wait it was ultimately decided to continue the meeting.

For the rest of the day no event included more than three machines, and this was rather going from one extreme to the other, since there was but little interest in watching races with

so few runners. The finishes were still very close, it is true, but during the laps the machines were necessarily well separated. However, this was better than risking a repetition of the accident which, in any case, spoilt the day for most of those present.

The High-Power Handicap drew but three starters—Squadron Leader Rea on the Boulton and Paul P9 (WS), Mr. Bramson on an S.E.5A, (IA), and Flight-Lieutenant Leach on the Vickers "Vixen III" (IP). Bramson appeared uncertain of the course, and went considerably out of his way, otherwise he might have won this race. As it was, he was second, with Rea first and Leach third.

While the officials were discussing how to organise the remaining event, *The Bournemouth and District Business Houses Sweepstake*, the three Gloster "Gamecocks" from Tangmere went out and again gave a superb demonstration of stunting in formation. It is useless to attempt to describe their exhibition. It must be seen to be believed.

Ultimately it was decided to run the next event in five heats, two semi-finals, and one final. Originally it had been intended to run two heats and a final, but as the entries for the first heat were 13 and for the second a similar number, and in view of what had happened earlier in the day, this was ruled out and the above arrangement decided upon.

Heat 1 was not without a humorous element, since the limit man was Trench on the Halton "Mayfly," with 30 h.p. Bristol "Cherub" engine, while Leach on the "Vixen" with 500 h.p. Napier "Lion" was scratch. 30 h.p. against 500! The third "man" in this heat was Lady Bailey on her "Moth" PU, and she won the race, although Leach all but caught her up on the finishing line.

Heat 2 was flown by the following: Sparks on "Moth" MF, Broad on "Moth" QH, and Bramson on S.E.5A (IA). Bramson won this race fairly easily.

Heat 3 was contested by Richards on D.H.53 QP, Summers on "Moth" PR, and Watt on "Avian" QL. Summers flew a very poor course, wandering all over the countryside, and tried to make up for this by taking his turns in the form of very imperfect "Immelmanns." Needless to say, he finished a very poor "third." The heat was won easily by Watt on the "Avian."

Heat 4 saw the following three starters:—Comper on C.L.A.4, de Havilland on "Moth" NO, and Gray on "Avian" QN. This was the order of starting, and also proved to be the order of finishing.

Heat 5 was between Rea on the P9, WS, Greig on "Genet-Moth" OU, and Hinkler on his "Avian" OV. Again the order of starting was maintained to the finish, Rea winning easily. Incidentally, Hinkler's new undercarriage is very much of a "brain wave." Not only does it greatly facilitate wheeling the machine with wings folded, but in taxiing it seems to be possible to swing the machine about as if it had a steering tail skid, while the wide track practically precludes the possibility of "cartwheeling" on the ground.

First Semi-final was contested by the three firsts from Heats 1, 2 and 3, and provided a very close finish, with Bramson first on IA, Watt second on QL, and Lady Bailey third on PU.

Second Semi-final.—Comper on PB, Rea on WS, and Courtney on OI. Rea caught up Comper on last field turning point and won the race. Courtney was third.

Final.—With only two machines flying, the last race of the meeting was not exactly full of tense excitement, the more so as Rea had an absolute walk-over on his Boulton and Paul P9.

Thus ended the Bournemouth Whitsun Meeting, and it can only be described as a thoroughly ill-fated and disappointing event, the effects of which will take a good deal of living down.



The Khartum-Kisumu Air Service

THE East African air service, which, unfortunately, suffered the loss of its own machine and one lent by the R.A.F., so soon after commencing operations in East Africa, in the care of Captain Gladstone, will resume next month when the original machine, the "Pelican," now being repaired at the Blackburn Aeroplane Company's works near Athens, Greece, will be returned. So far, five of the 24 flights subsidised by the Sudan, Kenya, and Uganda Governments have been flown. Despite these early mishaps the opinions of the experts concerned in this fine effort to connect Khartum and Kisumu by air are very optimistic yet. It brings these places within fifteen hours' flying time of each other completed over two days' journey. The distances between the fuel depots on the route conveniently become shorter as the altitude above sea level rises, which is very important from

a commercial consideration, as during the period when normally the machine would not be able to carry the same load owing to the variations in altitude it is possible to reduce the petrol carried, and thus maintain an even balance of load throughout the 1,350 mile line. This service, even in its short life, has proved the value of the aeroplane in scattered areas, for it was instrumental in saving the life of an officer in the Colonial Service by transporting a medical colleague and special drugs to him quickly. He was at work in a sleepy sickness area at Nimule, Sudan, and became stricken with blackwater fever. He was put on the river steamer to be taken down to Butiaba, Uganda, but it was feared that the fever would prove fatal to him before proper treatment was available. Captain Gladstone heard of this when the boat was 100 miles away, and he immediately flew over with a doctor who was able to save the life of his stricken colleague.

NEW YORK-BERLIN (NEARLY)

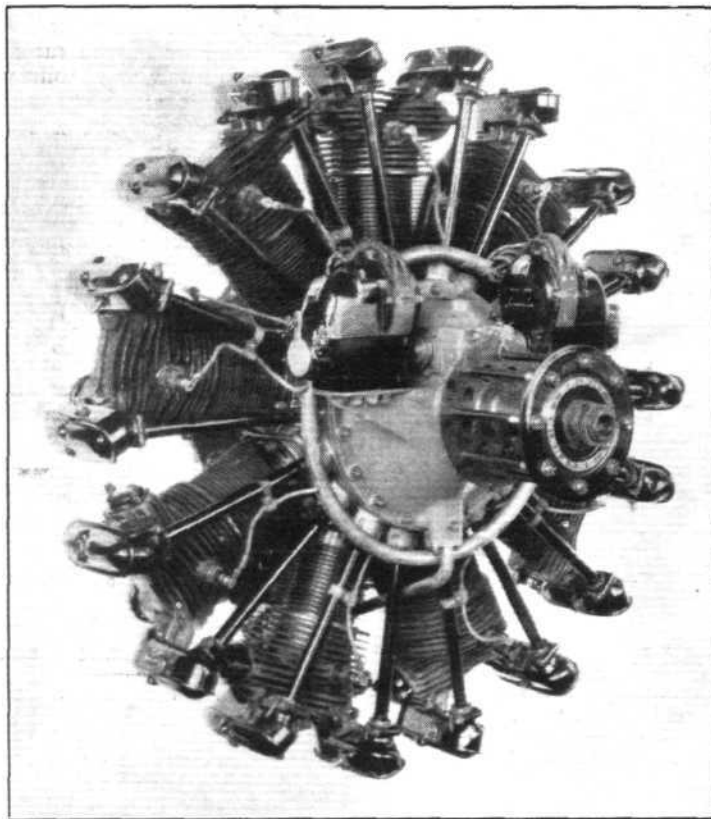
Clarence Chamberlin Goes One Better Than Capt. Lindbergh

ONCE again has a non-stop flight been made across the Atlantic from New York to Europe, this time bettering—as far as distance is concerned—Capt. Lindbergh's historic flight. On June 4, Mr. Clarence D. Chamberlin—one of the bunch of American pilots that had been waiting an opportunity to set out on the New York-Paris flight for the Orteig Prize—accompanied by Mr. Charles Levine, managing director of the Columbia Aircraft Corporation (Bellanca), set out from New York in the Bellanca-Wright monoplane with the intention of beating the world's non-stop distance record set up by Lindbergh. On June 6, they landed some 100 miles short of Berlin. Thus, although they failed to reach their goal (Berlin), they succeeded in attaining the object of the flight.

At the moment it is not possible to give the exact distance flown—for what with dodging storms and missing their way, the actual route taken was at times somewhat devious—but the flying distance between New York and Helfde (where they landed) is given as 3,905 miles. Of course, they flew a much greater distance than this, something over 4,000 miles, but it is clearly established that Lindbergh's effort has been beaten by several hundred miles. They were in the air about 43 hours.

It is of interest to note that Chamberlin's machine was the same Bellanca monoplane (220 h.p. Wright "Whirlwind") on which he and Bert Acosta recently established the world's duration record of 51 hrs. 11 mins.

Chamberlin and Levine left Roosevelt Field, New York, at 6.4 a.m. (11.4 p.m. B.S.T.), and flying along the coast northwards passed over Halifax, Nova Scotia, at 7.40 p.m. (E.S.T.), and a few minutes later left the mainland at Cape Race,



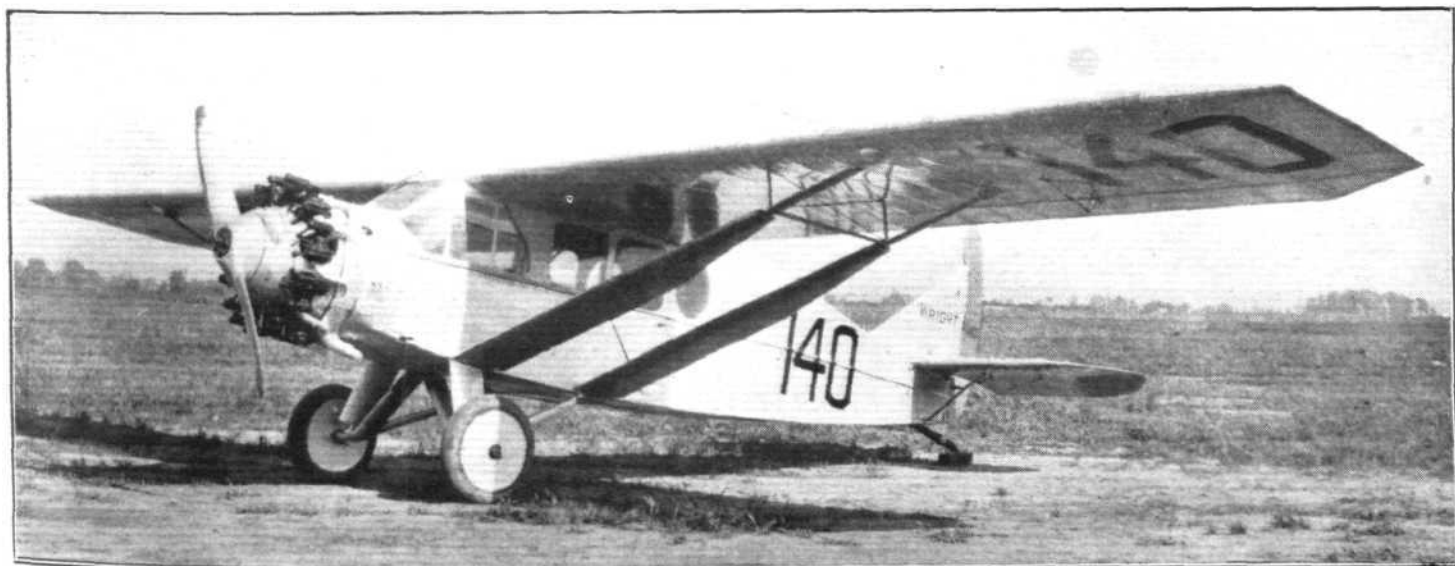
The 220 h.p. Wright "Whirlwind" engine used in the Bellanca monoplane.

Newfoundland. The next reliable news of their progress came on Sunday, from the Cunard liner *Mauretania*, in a wireless message stating that "at 3.30 p.m. G.M.T. monoplane NX 357.140 circled the ship and flew away, steering eastward." This was at about 300 miles from Valentia, Ireland, or 350 miles from the Scilly Isles.

Then, at 9.10 p.m., the Bellanca was reported from Plymouth, having also been seen at certain points in Cornwall. By this time the airmen were beginning to encounter bad weather, and had to dodge about to avoid storms, for after leaving the Channel they were reported seen from such varying points as Normandy, Holland and Saxony!

Apparently, Chamberlin was having a try for Rome at first, but head winds and dwindling petrol decided him to make for Berlin, and at 4 a.m. he came down low over Dortmund to find his way—this being signalled to him. After this he lost his bearings and eventually ran out of petrol, necessitating a landing at Helfda, near Eisleben, 100 miles

from Berlin, at about 5.30 a.m. Some fresh petrol was obtained here, and after a stop of about 4 hours, they proceeded on their way to Berlin. Once again, however, they lost their way, and after flying for some three hours, again ran out of petrol and landed in a marshy field near Kottbus (60 miles S.E. of Berlin). In landing, the airscrew was damaged, and the machine sank into the mud. Naturally, they met with an enthusiastic reception from the inhabitants, and before long representatives of the Government, newspaper reporters, etc., arrived—by air—from Berlin, where they had been awaiting their arrival. Next week, we will describe the reception in Berlin, whence they flew on June 7.



The Bellanca monoplane on which Messrs. Chamberlin and Levine flew from New York to within 100 miles of Berlin.

"THE SPIRIT OF ST. LOUIS"

The Ryan Monoplane Described

Now that due homage has been paid to the human element of the splendid non-stop flight from New York to Paris, there is an opportunity to sit down quietly and contemplate the technical equipment used by Capt. Lindbergh in his historic flight. The personal factors that made for success were skill in piloting and navigation, unlimited pluck, and a magnificent physical constitution able to stand the strain of so many hours without sleep. It will be of interest to examine, in so far as we may, the technical factors that made the flight

who are not very familiar with such work. Before doing so, however, a few words concerning the design and construction of the Ryan monoplane may be of interest.

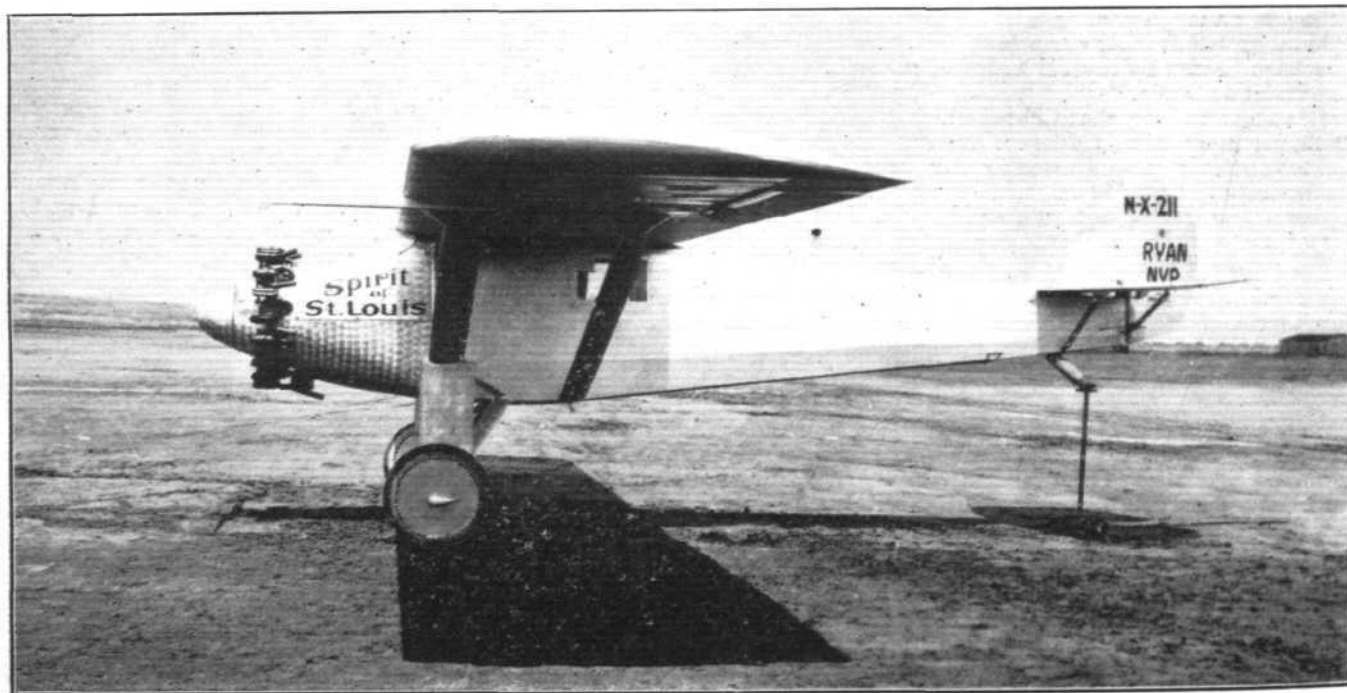
As the accompanying photographs will show, the Ryan N.Y.-P type is a high-wing monoplane with strut bracing to the lower longerons of the fuselage, a radial air-cooled Wright "Whirlwind" engine in the nose, the pilot's cockpit situated under the trailing edge of the wing so that the view forward is entirely "blind," and a somewhat unusual undercarriage.



THE RYAN MONOPLANE, TYPE N.Y.P.: Front view.

possible. Fortunately, we have been able to secure a good deal of technical documentation concerning the "Spirit of St. Louis," although it is regretted that at the moment detailed data relating to the Wright "Whirlwind" engine are not available. Some of these data can be estimated from information given incidentally in the calculations relating to the machine, but for others it will be necessary to wait for particulars to arrive from the Wright Aeronautical Corporation, the makers of the engine.

The latter is of the divided type without wheel axle, the stub axles being the apices of two steel tube vees hinged to the lower longerons, and springing being by telescopic struts to the front wing spar strut, short sloping struts transmitting the load to the top longeron without imposing bending stresses on the wing strut, the structure being completed by a short vee to the lower longeron. The duty of this vee is, of course, to relieve the front wing strut of any bending load in a fore-and-aft direction. The arrangement does not make for



THE RYAN MONOPLANE: Side view.

The Ryan monoplane used by Lindbergh was designed by Mr. Donald A. Hall, chief engineer and designer of Ryan Airlines of San Diego, California, the firm which built the machine, and we are extremely glad to be in a position to present to our readers this week a number of graphs prepared by Mr. Hall in getting out his estimates for the transatlantic flight. No explanatory text accompanied the graphs, so that the following notes have been added by us mainly to assist in the task of interpreting the curves to those of our readers

"cleanness" particularly, but it does give a very wide wheel track and thus reduces the tendency of the machine to cartwheel on the ground.

Structurally, the Ryan monoplane is of normal construction, the fuselage being a steel tube structure, while the monoplane wing is a wood and metal construction, with box spars, wood ribs and tierod drag bracing. Generally speaking, the machine follows the lines of the Ryan M1 monoplane used for commercial work, the main difference

being the larger petrol tankage and slightly larger wings. The wing section used is that known as the "Clark Y" section. The leading edge is covered over with three-ply wood so as to preserve a more exact wing curve and give greater strength. Ailerons of normal type and proportions are fitted. The tail surfaces are of steel tube construction.

The "office" is, as already mentioned, under the trailing edge of the wing, and there is a window in each side and one in

is a very good commonsense machine. That there is nothing startlingly remarkable in it from an aerodynamic point of view will be realised when we come to examine this side of its design.

Following are the main dimensions, etc., of the Ryan monoplane: Wing span, 46 ft.; wing chord, 7 ft.; wing area, 319 sq. ft.; wing section, Clark Y; engine, Wright J-5-C, giving 223 b.h.p. at 1,800 r.p.m.; propeller, Standard



THE RYAN MONOPLANE: Three-quarter front view. Note the strutting of the undercarriage.

the roof. Diagonally forward and downward the view is good, but straight forward it does not exist, and a form of periscope has been installed to enable the pilot to look forward. This consists of a mirror which can be pushed out of the window and, in facing forward, reflects the view past the engine on to another mirror on the instrument board in front of the pilot. That this is anything but a makeshift arrangement can scarcely be claimed, but as Lindbergh was not likely to meet thousands of aeroplanes on his flight across the Atlantic, this compromise was chosen as being permissible for the particular flight, and the success of the flight proves this contention to have been justified. The shelter of a cabin, the relatively great distance away from the engine with its noise and fumes,

Steel Propeller Company's, of Duralumin, set at $16\frac{1}{4}$ degrees pitch.

The weight of the Ryan monoplane bare is 2,150 lb., and the load for the transatlantic flight was composed as follows: Pilot, 170 lb.; petrol, 425 gallons (Western at 6.12 lb./gal.), 2,600 lb.; oil, 25 gals. at 7 lb./gal., 175 lb.; total weight of load, 2,985 lb.; total loaded weight of machine at start, 5,130 lb.; weight of machine at end of flight, without petrol but with 10 gals. of oil left, 2,415 lb. *Wing Loading:* Fully loaded at start of flight, 16.1 lb./sq. ft.; light at end of flight, 7.57 lb./sq. ft. *Power Loading:* Full load at start of flight, 23 lb./h.p.; light at end of flight, 10.8 lb./h.p.

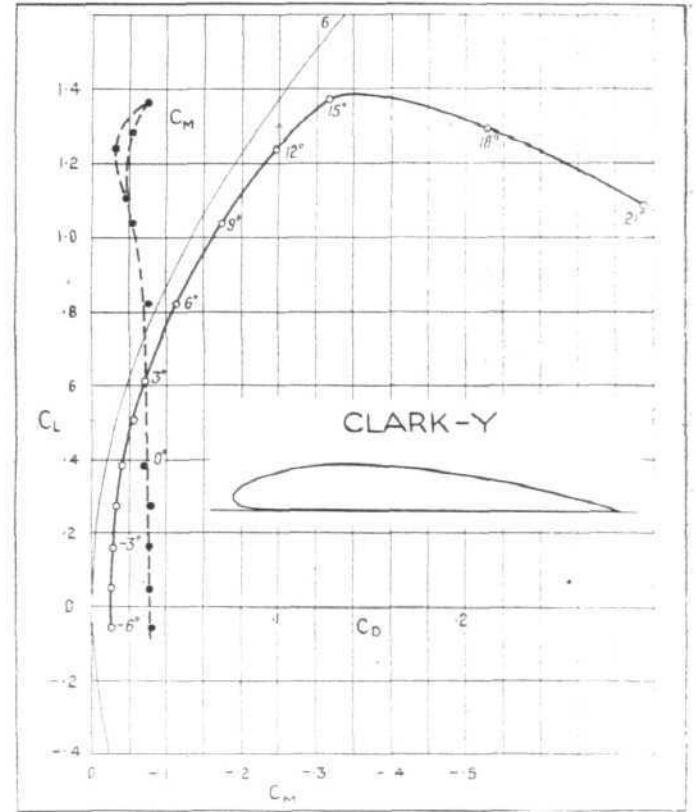
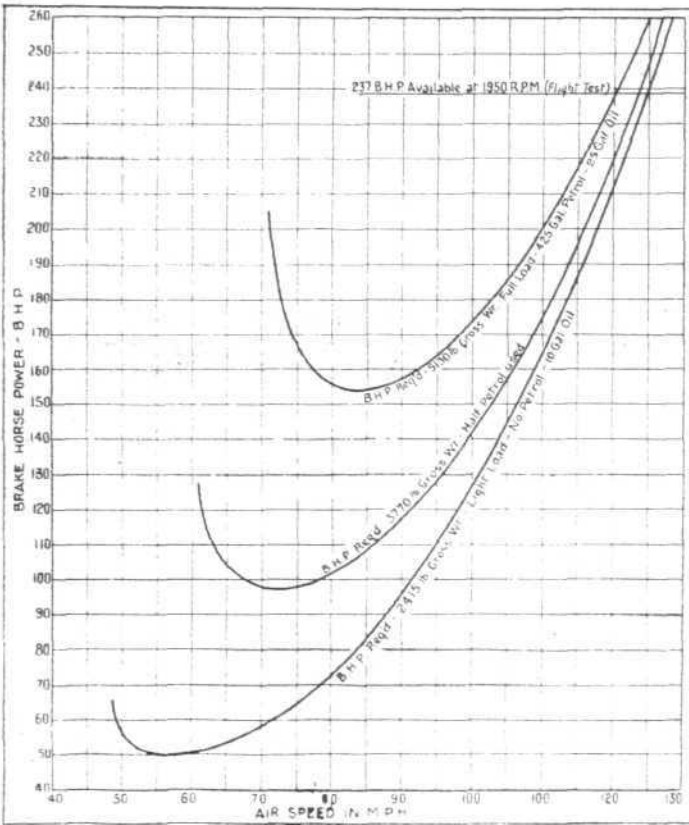
Following is the *estimated performance* (r.p.m. data based



THE RYAN MONOPLANE: This view of the machine in flight shows most of the special features. Particularly so as regards the undercarriage, the complete strutting of which is visible. Note also the side window.

were factors much more important than forward view, and the way Lindbergh handled his machine at Croydon under very bad conditions proved that sideslipping can be made to make up for poor view forward. In any case, the design of a machine for such a specific purpose involves endless compromises, and we have known of much worse than this one feature of the Ryan for which it has been criticised. In every other respect everyone agrees that the "Spirit of St. Louis"

on test and theory): Maximum speed with full load, 120 m.p.h.; with light load, 124.5 m.p.h.; minimum speed with full load, 71 m.p.h.; with light load, 49 m.p.h. *Economic speed:* with full load, 97 m.p.h. at 1,670 r.p.m.; with light load, 67 m.p.h. at 1,080 r.p.m. *Fuel Economy at Economic Speeds:* Full load with full rich mixture, 6.96 miles per gallon; light load with lean mixture, 13.9 miles per gallon. *Range:* At ideal speeds of 97 m.p.h. at start



THE RYAN MONOPLANE, TYPE N.Y.P.: Curves of h.p. required versus airspeed for full load, half load, and light.

Section and Polar Curve of Clark Y aerofoil at Reynolds number 3,610,000. From N.A.C.A. Report No. 233.

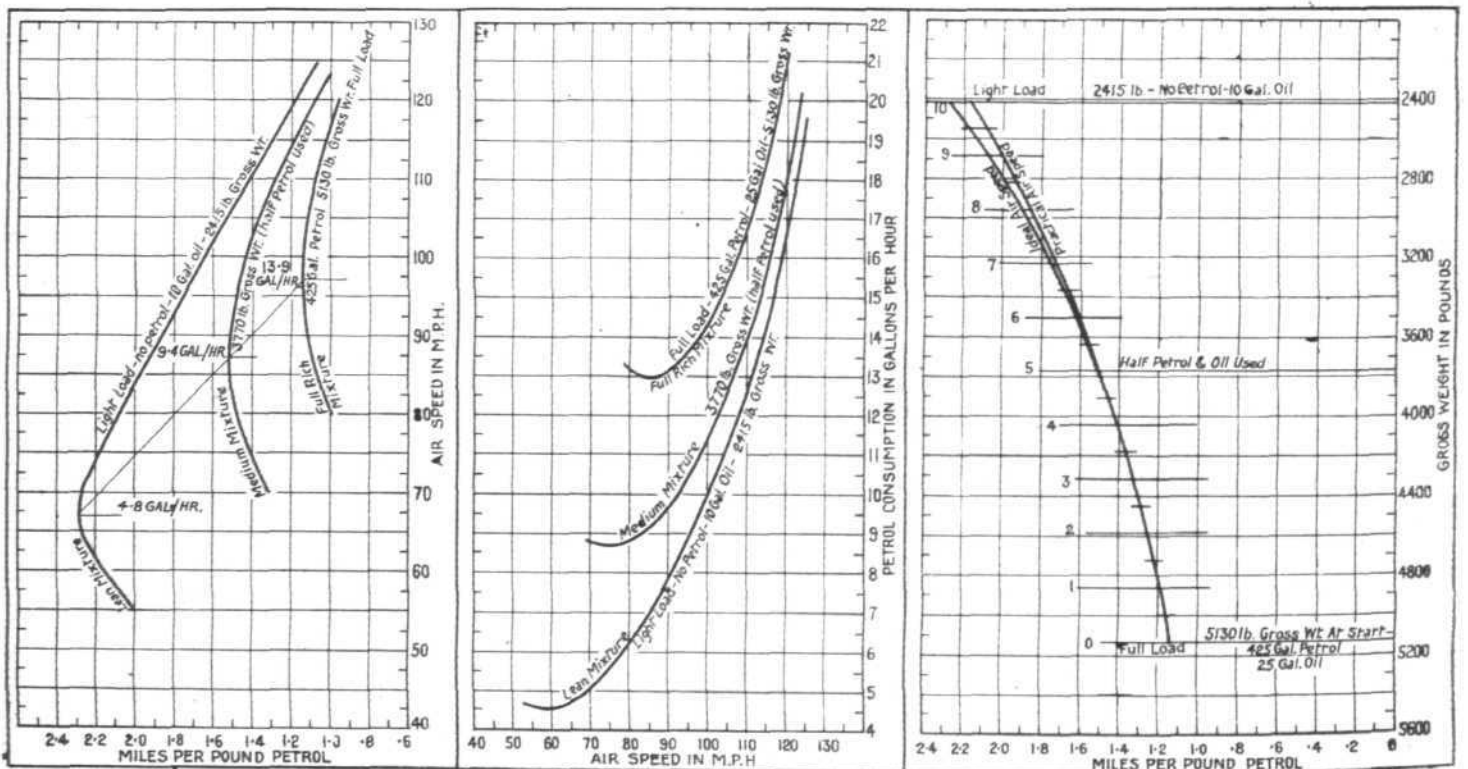
and 67 m.p.h. at end, 4,110 miles. At practical speeds of 95 m.p.h. at start and 75 m.p.h. at end, 4,040 miles.

FLIGHT TEST PERFORMANCES

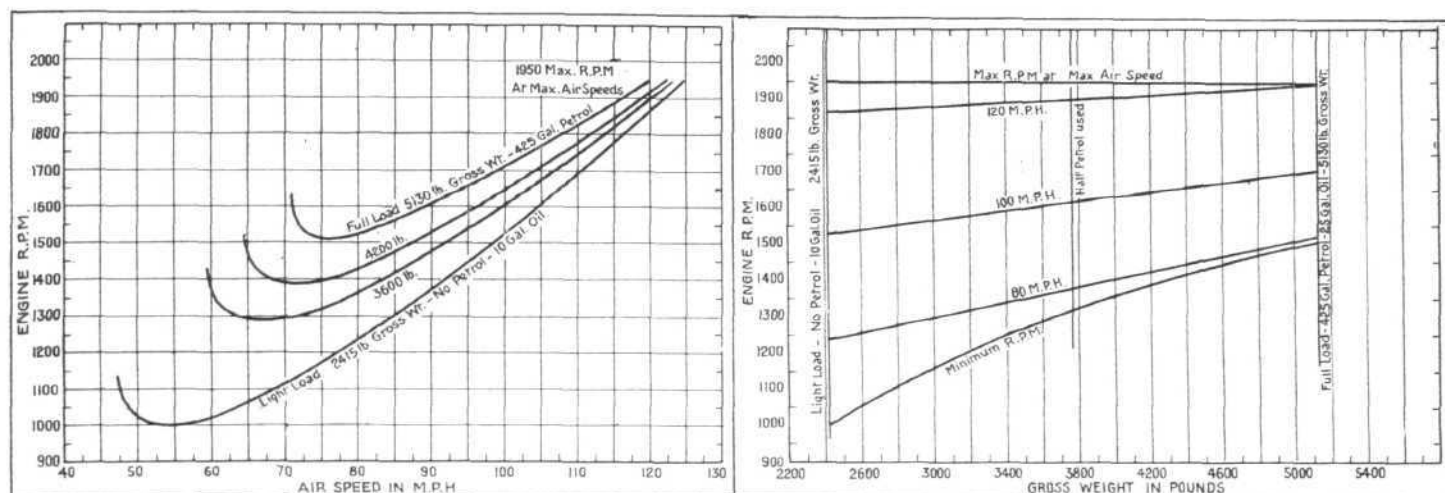
While the previous figures are estimated ones, the following figures are the result of actual flying tests. The maximum speed, with 25 gallons of petrol and 5 gallons of oil, was 129 m.p.h. over the 3 km. course. With full load of 425 gallons of petrol and 25 gallons of oil the maximum speed was 124

m.p.h. approximately, based upon calculated performance. With 25 gallons of petrol and 4 gallons of oil the speed by airspeed indicator was 128 m.p.h., and with 201 gallons of petrol and 4 gallons of oil the speed was 127 m.p.h. by air-speed indicator.

Take-off Distances.—In the table given below are set out the results of tests made at Camp Kearney, near San Diego, California, which is situated 600 ft. above sea level. The quantity of oil carried was 4 gallons.



THE RYAN MONOPLANE: On the left, miles per pound of petrol versus airspeed. In the centre, petrol consumption versus airspeed, and on the right, miles per pound of petrol versus gross weight.



THE RYAN MONOPLANE : Left, Engine r.p.m. versus airspeed at various gross weights. (Based on flight tests and experimental theory.) On the right, Engine r.p.m. versus gross weight.

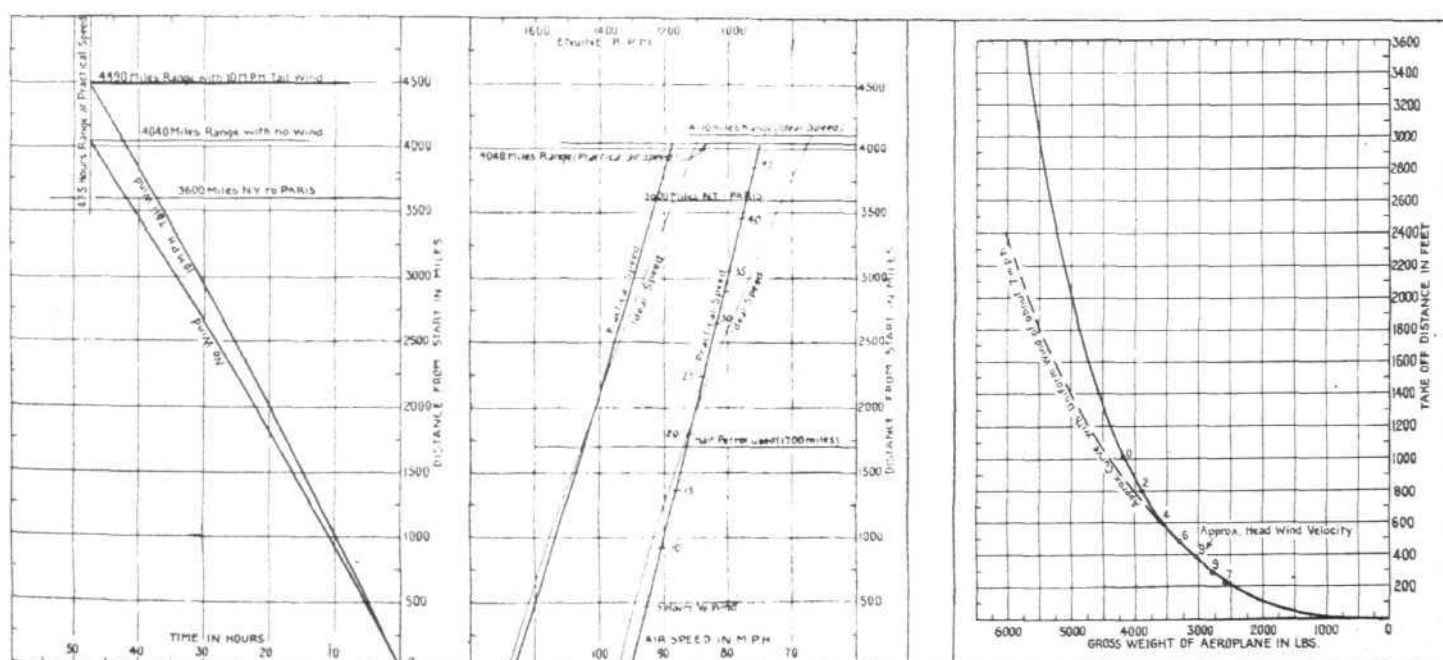
Petrol (Galls.)	Gross Wt. (Lb.)	Approx. Headwind (m.p.h.)	Take-off Distance (ft.)
35	2,600	7	229
71	2,800	9	287
111	3,050	9	389
151	3,300	6	483
201	3,600	4	615
251	3,900	2	800
301	4,200	0	1,023

It will be seen that even with 4,200 lb. total loaded weight, and in still air, the take-off run was not excessive, especially in view of the fact that Kearney field is 600 ft. above sea level. Apparently no actual take-off tests with full load

fuel used, or for a gross weight of 2,415 lb., the power required is 50 h.p. at 58 m.p.h. These figures correspond to an L/D of approximately 7.5.

A speed of 100 m.p.h. seems to be a sort of magical figure nowadays, this being the operational speed required of aircraft on European air routes, and a speed which seems to have become accepted as a fair all round speed for civilian aircraft generally. Incidentally, it was the average speed, near enough, both of Carr and Gillman's Hawker "Horsley" and of Lindbergh's "Spirit of St. Louis." If we examine the curves for the Ryan monoplane at this speed, it is found that for full load the machine requires 174 h.p., for half load 142 h.p., and for no load 127 h.p.

The next step is to ascertain which compromise between



THE RYAN MONOPLANE : On the left, Time versus distance for no wind and for a following wind of 10 m.p.h. Centre, Airspeed and r.p.m. versus distance. On the right, Results of take-off tests at Camp Kearney (600 ft. above sea level).

were attempted until the start of the flight from New York, and concerning this, Lindbergh has stated that, apart from the sticky nature of the aerodrome, he had no difficulty in getting off. One of the accompanying curves shows take-off distances, but presumably the portion of the curve from total weight of 4,200 lb. onward is estimated. According to this, the take-off run with full load should be 2,200 ft. in still air.

Turning to the air performance of the Ryan monoplane, we give a set of curves showing horse-power required plotted against airspeed. From these it will be seen that the minimum power required for full-load condition is 153.5 h.p. at a speed of 84 m.p.h. With half of the petrol used, i.e., at a gross weight of 3,770 lb., the minimum power required is 97.3 h.p. at a speed of 72.5 m.p.h. Finally, with all the

least power required and best engine speed gives the most suitable cruising speed for the long flight across the Atlantic. Unfortunately we have no curves of the Wright "Whirlwind" engine, nor of the Duralumin propeller with adjustable pitch. We can, therefore, do no more than refer to the curves got out by Mr. Hall. Three sets of these refer to fuel economy. The left-hand chart of the set on p. 378 gives three curves of miles per lb. of fuel against airspeed, for full load, for half load, and for no load. For the full load condition, the maximum mileage per lb. of fuel is found to be 1.15 at about 97 m.p.h., which corresponds to a petrol consumption of 13.9 gallons per hour. For half load the best mileage is 1.52 miles per lb., corresponding to 9.4 gallons per hour and

(Concluded on p. 385.)

PRIVATE



FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

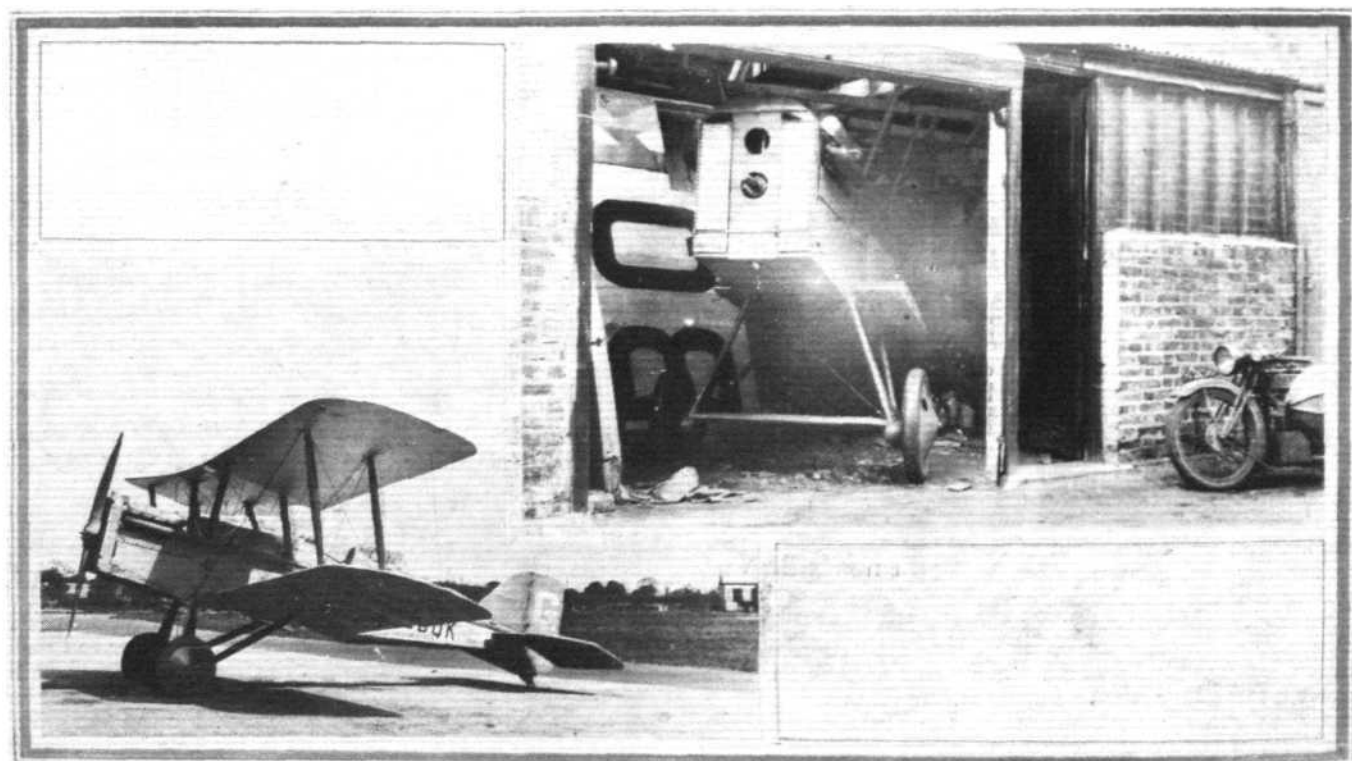
A PRIVATE OWNER'S SUCCESSFUL DEBUT

ONE of our private owners made his début in air racing at the recent Hampshire meeting under rather unusual circumstances, and his success in the face of them was therefore the more praiseworthy. This was Mr. Kenneth Hunter, whose S.E.5a machine won the Morris Cup and £100 in the Morris Handicap Race. It was only on the Tuesday before the race that the Henderson Flying School received the machine and in the short time available they had to completely rig it, tune the engine, adjust and test, and generally prepare the machine for its Airworthy Certificate tests. On the Friday it was taken for the first test flight and after this the engine had again to be tested and the rigging readjusted, so that considering the eventual result of their work the mechanics have every reason to be proud of it.

On the day before the race Mr. Youell, the Imperial Airways pilot, flew it down to Hamble, and on Sunday he carried off the most valuable prize of the pageant. It proved capable of a first-class performance, quite equal to that of Mr. D. A. N. Watt's S.E.5a, which is acknowledged to be exceptional in every way. It was registered as a private aircraft on March 19, 1927, and was one of the type originally constructed by Messrs. Vickers who, of course, designed the S.E.5a during the war as a single-seater fighter. With regard to its condition it is practically as new, for it had been flown very little during its career. The owner himself completely re-covered the machine, that is, the wings and fuselage were re-fabricated, and he also painted on the registration marks. In general colour it is blue and silver. From the photographs we get an admirable illustration of the small garage required by the private owner, even if he is using an S.E.5a instead of a light aeroplane. It can be seen that it is hardly as wide, at least, as the usual house garage. In this place Mr. Hunter was able to do all that was necessary. From the garaging aspect the S.E.5a has both disadvantages and advantages over the

average light aeroplane. The wings do not fold back but they are taken down and replaced very easily, and without them it does not take up the width of the light plane with folded wings.

For private flying, perhaps, its one fault is being a single-seater, although despite this it is much favoured by private owners. Mrs. Elliott-Lynn owns one, Dr. Whitehead Reid, our first registered private-owner, has had one since 1922, as well as an Avro 548, whilst Flying-Officers Waghorn and Wheeler have one each for their private use. Mr. D. A. N. Watt is perhaps the outstanding owner of the type, for which he made history and a nickname for himself at the last Bournemouth meeting at Easter. Amongst the private owners today more old types of aeroplanes, including S.E.5a's, B.E.2e's and Avros are used than modern light planes. A particular use to which the S.E.5a has been well adapted since the war is sky-writing. Many of them in existence or use now are fitted with a Wolseley "Viper" 210 h.p. engine. Following this initial success of his machine, it is Mr. Hunter's intention to fly it himself in air races. He hoped to commence at the Whitsun Bournemouth air meeting and had entered his machine for four races, the Private Owners' Handicap, High-Power Handicap, Bournemouth Hotels Association Sweepstake and the Bournemouth and District Business Houses Sweepstake, and Lt.-Col. G. L. P. Henderson was scheduled to fly for him. However, for some reason or other most of the S.E.5a machines went on strike at Bournemouth including Mr. Hunter's so that he has yet to make his début as a racing pilot. This keen interest of private owners generally in air racing suggests a possible future for the sport, and it should follow reasonably that the aircraft industry will be called upon to manufacture purely racing machines for some owners as well as the present touring types, or machines with potentialities for air racing.



Mr. Kenneth Hunter's S.E.5a, which he renovated himself. The photograph reveals the small garage space in which the old single-seater fighter can be kept with the wings taken down. It won the first race of its career at the Hampshire Pageant, when Mr. Youell carried off the Morris Cup and £100.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.
Bristol and Wessex Aeroplane Club, Yate, Gloucester. Sec., C. S. Clarke, Channel Road, Walton Park, Clevedon, Somerset.
Hampshire Aeroplane Club, Hamble, Southampton. Sec., Maj. Ross White, Hamble, Southampton.
Lancashire Aero Club, Woodford, Lanes. Sec., C. J. Wood, Oakfield, Dukinfield, near Manchester.
Midland Aero Club, Castle Bromwich, Birmingham. Sec., Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-upon-Tyne Aero Club, Cramlington, Northumberland. Sec., A. H. Bell, c/o The Club.
Norfolk and Norwich Aero Club, Mousehold, Norwich. Sec., H. O. Bennett, 5, Opie Street, Norwich.
Suffolk Aeroplane Club, Ipswich.—Secretary, Courtney N. Prentice, "Hazel Dell," Stowmarket, Suffolk.
Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Sec., J. F. Barnes, 39, Swan Arcade, Bradford.

London Aeroplane Club

The flying time for the week ending June 5 was 53 hrs. 25 mins.
 Pilot Instructors:—Capt. F. G. M. Sparks, Capt. S. L. F. St. Barbe.
 Dual Instruction:—I. H. McClure, E. J. B. King, G. Black, G. M. Randall, E. K. Blyth, I. C. Horton, L. C. Davey, J. W. Whitelaw, Miss Wilson, P. H. R. Whitehead, H. R. Presland, J. R. de Havilland, J. C. Clarkson, Miss Fletcher, E. A. Lingard, L. Rowson, C. L. Harrison, A. H. M. Lees, B. J. Luff, L. Daniels, Lord Carlou, O. A. A. Pollard, H. M. Samuelson, G. H. Craig, J. H. Vaisey, Miss O'Brien, L. W. Gibbens, Miss Spooner, A. C. M. Jackaman, M. P. Susman, C. Miesegae, A. B. Ferguson, A. J. Richardson, A. Southgate, H. J. Greenland.
 Solo Flying:—O. J. Tapper, N. J. Hulbert, J. C. Horton, R. C. Presland, A. F. Wallace, E. L. D. Moore, W. Hay, I. H. McClure, Miss O'Brien, H. Petre, R. Sanders Clark, J. J. Hofer, L. W. Gibbens, A. C. M. Jackaman, Miss Spooner, G. Merton, M. P. Susman, R. Malcolm, G. H. Craig, A. C. Pearson, A. G. D. Alderson, A. J. Mulder, K. V. Wright, C. E. Murrell.
 Passenger Flights:—L. C. Davey, H. J. Greenland, Miss Frewman, Miss Darroch, Commander Mackintosh, Mrs. McClure.
 Aviator's Certificates:—On Friday, June 3, 1927, A. J. Mulder passed the tests for an Aviator's Certificate, and on Thursday, June 2, 1927, I. H. McClure also passed the tests for his Aviator's Certificate.

Lancashire Aero Club

REPORT for week ending June 4:—Total flying time, 35 hrs. 15 mins., made up as follows:—Dual instruction, 17 hrs. 25 mins.; solo, 8 hrs. 15 mins.; joy rides, 8 hrs. 15 mins.; test flights, 1 hr. 20 mins.
 During the week, Mr. Chapman, taxi-ing too fast downhill and down-wind, found himself unable to avoid the ditch at the bottom of the slope. With considerable agility and presence of mind he leaped out, ran to the wing-tip, and almost succeeded in turning the machine in time. One wheel, however, just went over the edge, but only the airscrew suffered any damage. Although not yet qualified for his "aerobatics" certificate, it is felt that Mr. Chapman ought to have one for "aerobatics."

Midland Aero Club, Ltd.

REPORT for week ending June 4.—The total flying time was 27 hrs. 21 mins. The following members were given dual instruction by Mr. McDonough:—R. D. Bednell, R. Cazalet, E. P. Lane, H. Beamish, H. Smith, R. L. Brinton, J. C. Rowlands, F. Coxhill, R. C. Hancock, J. Austin, G. Aldridge.
 The following flew Solo:—W. Swann, A. M. Glover, E. R. King, S. H. Smith, R. L. Jackson, R. C. Hancock, C. Fellowes, E. J. Brighton, J. F. C. Brinton.
 Passengers with Mr. McDonough:—F. J. Whitworth. With Mr. Brighton:—N. Crane, Capt. J. E. Brewin, D. Walker, L. P. Lee, L. H. Lee. With Mr. Glover:—Capt. J. E. Brewin, R. L. Jackson.
 EBLW is entered for the Newcastle Pageant, and Mr. Brighton will represent the club in the race for club members. We shall not close down at the aerodrome during the week-end as Mr. Glover has undertaken to carry on the instructional work.
 On Wednesday (Derby Day) EBLW was seen to leave the aerodrome heading in a south-easterly direction with special duties to perform.

A Forced Landing

THE HON. LADY BAILEY, who flies nearly every day in her "Moth," was flying over Leicestershire recently when engine trouble developed, and a forced landing became imperative. This she accomplished very skilfully in a field near Peatling Hall, the home of Col. Gemmell, where she remained for the night.

For a Good Cause

LORD OSSULSTON has commenced a campaign in the cause of making the public "air-minded" by taking up joy-riders in his "Moth" at the rate of 5s. for each flight. He is one of our private owners who is always turning his interest in flying to some practical value for aviation generally.

Mr. Bert Hinkler's Plans

THE proposed flight in an "Avian" to Australia by Mr. Bert Hinkler is likely to commence shortly. Mr. Hinkler has been interestingly engaged on testing the racing seaplane, the "Crusader," at Felixstowe, the machine recently constructed by Short Bros. to the order of Col. Bristow.

A New Mount

CAPT. DEVEREUX MILBURN, the famous international polo player, is turning his attention, at least part of the time, to a safer sport than polo, and that is flying. Lord Ossulston has been instructing him, and the famous horseman is proving an apt pupil.

A "Moth" in South Africa

RECENTLY, Maj. Miller, a member of the Union House of Assembly and a distinguished airman whose name has arisen very often with air developments in South Africa, flew round the Union in a "Moth" in eight days. His machine was fully loaded, and a journalist accompanied him. Without any previous ground arrangement he covered 2,300 miles, according to schedule, at an average speed of 80 to 85 miles an hour. The feat was hailed as a distinct advance in civil flying in South Africa, and it demonstrated the suitability of

The machine was later seen flying over Oxford, Maidenhead, Reading, Stag Lane, Towcester and Coventry. She afterwards returned to her base intact.

Suffolk Aeroplane Club

REPORT for week ending June 4.—On Thursday afternoon Capt. Kent, flying Avro G.EBKB, arrived at the Club Aerodrome, Bucklesham Road, Ipswich.

The following members received joy-rides:—Mrs. Billinton, Mrs. Courtney Prentice, Mr. Billinton, Mr. R. W. Fison, Mr. C. N. Prentice and Master Eugene Prentice.

On Saturday afternoon Mr. Billinton, with Capt. Kent (pilot), flew over to Saxmundham.

The club's "Bluebird" should have been delivered last Saturday, the 28th. Unfortunately, owing to the delay in obtaining delivery of a "Genet" engine for same, the Blackburn Aeroplane Co. regret they will not be able to deliver before the end of July.

A Club Dance will be held at the Great White Horse Hotel, Ipswich, on Friday, June 10, from 8.30 p.m. to 2 a.m. Double tickets, 7s. 6d., single, 4s.

Yorkshire Aeroplane Club

REPORT for the week ending June 4:—The total time flown for the week amounted to 28 hrs. 25 mins., made up as follows:—Dual instruction, with Mr. G. R. Beck, 15 hrs. 50 mins.; cross-country, 3 hrs. 20 mins.; photography, 35 mins.; tests, 20 mins.; joy rides, 1 hr. 15 mins.; aerodrome solo, 7 hrs. 7 mins.

Dual with Mr. Beck:—Major-General Sir L. W. Atcherley, Capt. Milburn, and Messrs. Blackburn, Thomson, Marchbank, Wilson, B. Dawson, L. S. Dawson, Bray, Oglesby, Henry Leatham, Ambler, Hylton, Williams, Birch, Watson.

Solo flying:—7 hrs. 7 mins. by Capt. Milburn, R. Atcherley, D. Atcherley, N. S. Norway, Ivo Thomson, V. Batcock, G. L. Wood, M. B. Lax, R. K. Lax, Henry Leatham, D. D. Little, L. S. Dawson.

On Thursday and Friday, G-EBNN was out of commission, having a change of engines after completing the time permitted for complete overhaul, consequently G-EBEX has been kept busy.

One of our recently-joined Members, Mr. Ivo Thomson, put up a real good show on his first solo on Sunday last. He had his first lesson in flying on April 28, and in 19 flights, comprising a total of 8 hrs. dual in exactly one month, he has become a most proficient pilot.

On Monday, Capt. Milburn chartered Mr. Beck and a "Moth" for a business trip to Newcastle, and on Tuesday, an interesting visit was paid to the works of the Blackburn Aeroplane Co., at Brough. Capt. Milburn got busy again on Wednesday, and went through his tests for "A" licence.

On Saturday we did very little, owing to the wind reaching gale force. Mr. L. S. Dawson did his cross-country test for Mrs. Robert Blackburn's prize. Leaving here he flew round Harrogate, York, Scarborough and back. It is hoped that all our Members will have a smack at this competition prior to July 31, which is the closing date.

the light 'plane. In the same machine Maj. Miller also caused some sensation by taking off from the Cape Town esplanade—the first time such an ascent had been done in the Union from a street. The run was long and fairly wide, the ground being level, whilst iron railings lined one side and a belt of trees the other. From a photograph the "Moth" is seen to have lifted well in the middle with ample room to spare on either side.

A Knight of the Air

ONE of our private owners, Sir John Rhodes, recently toured in his "Moth," in which he has now had fitted a Mark II "Cirrus" engine, to Norwich and Bircham Newton on one day, Bristol and Winchester the next, returning to Stag Lane that evening. On both days Lady Rhodes travelled in the passenger's seat.

To Golf by "Moth"

CAPT. W. R. BAILEY, a member of Lloyd's, flew from London to Royal Borthcawl golf course, Glamorganshire, during the week-end in his "Moth," and within five minutes of his arrival was driving off the first tee. Capt. Bailey declares that it is cheaper to run an aeroplane than a 15 h.p. car. He returned to London in less than two hours, making the journey at a speed of 90 m.p.h.

Beyond the Border

MRS. ELIOTT-LYNN flew from London to Glasgow on June 7 in a "Moth" loaned to her by the Hon. Lady Bailey. Leaving Stag Lane at 4.30 a.m., and flying alone, she reached Brough aerodrome on the Humber, ten miles west of Hull, and had breakfast there. Then she went on to Edinburgh and landed for lunch, finally descending by mistake at Inchinnan, 5 miles beyond Renfrew, her intended destination. This was eventually reached an hour later, in the afternoon. The purpose of her flight north was to lecture on flying at Glasgow the next day. She had originally planned to commence from Bournemouth in the Westland "Widgeon" that crashed so disastrously.

AIRISMS FROM THE FOUR WINDS

Capt. Lindbergh Returning Home

CAPTAIN LINDBERGH has now gone to the greatest scenes of his triumph, if they can possibly be imagined after all that has happened in England, France, and Belgium. He is aboard the U.S. cruiser *Memphis*, bound for Washington, where President Coolidge will personally welcome him. He flew from Kenley to Paris on June 3, landing at 10.1 a.m., in a Hawker "Woodcock," a single-seater fighter, being escorted by two Gloucester "Gamecocks" from Kenley as far as the coast. He left Le Bourget the next morning in a Breguet XIX biplane, after he had watched Captains Coste and Rignot start on their great endurance flight (which, unfortunately, failed as far as the record was concerned), and landed at Lessay, Cherbourg, at 11.48 a.m., having struggled through fog, rain, and a cross wind. He was escorted part of the way by 20 French aeroplanes, and when the *Memphis* left the harbour seven aeroplanes circled the cruiser and followed as far as Barfleur. It is reported that the Smithsonian Institution at Washington has awarded the Langley Medal to Capt. Lindbergh, while the Governor of Missouri has announced that a commission as Colonel in the National Guard has been conferred on the airman.

The First Manitoba Air Mail

ON June 1 the Manitoba mail was carried by air for the first time. The Post Office Department of Ottawa has granted permission to Western Canada Airways, Ltd., to carry mails to the Central Manitoba section of the Lake Winnipeg mining area, and air mails will be carried in all passenger aeroplanes operating from Lac Dubonnet this summer.

Coste and Rignot are Unlucky

CAPTAINS COSTE AND RIGNOT left Le Bourget on the morning of June 5 in a Breguet with 600 h.p. Hispano engine in an attempt to break the long distance record first held by Captain Lindbergh and so quickly annexed from him by Mr. Clarence Chamberlin. Siberia was their destination, but they failed to reach the Siberian Border by 140 miles, having flown about 3,125 miles. They landed at Nijini-Tagilsk in the Central Urals, 75 miles N.N.W. of Ekaterinburg, on Sunday after flying for 29½ hours continuously. They had been most unfortunate on the way, as for 15 hours

of the time they were fighting against rain, fog and storms. Finding that it was impossible to cross the mountainous region they sought for a landing place and were obliged to cruise round for about three hours before they could find one.

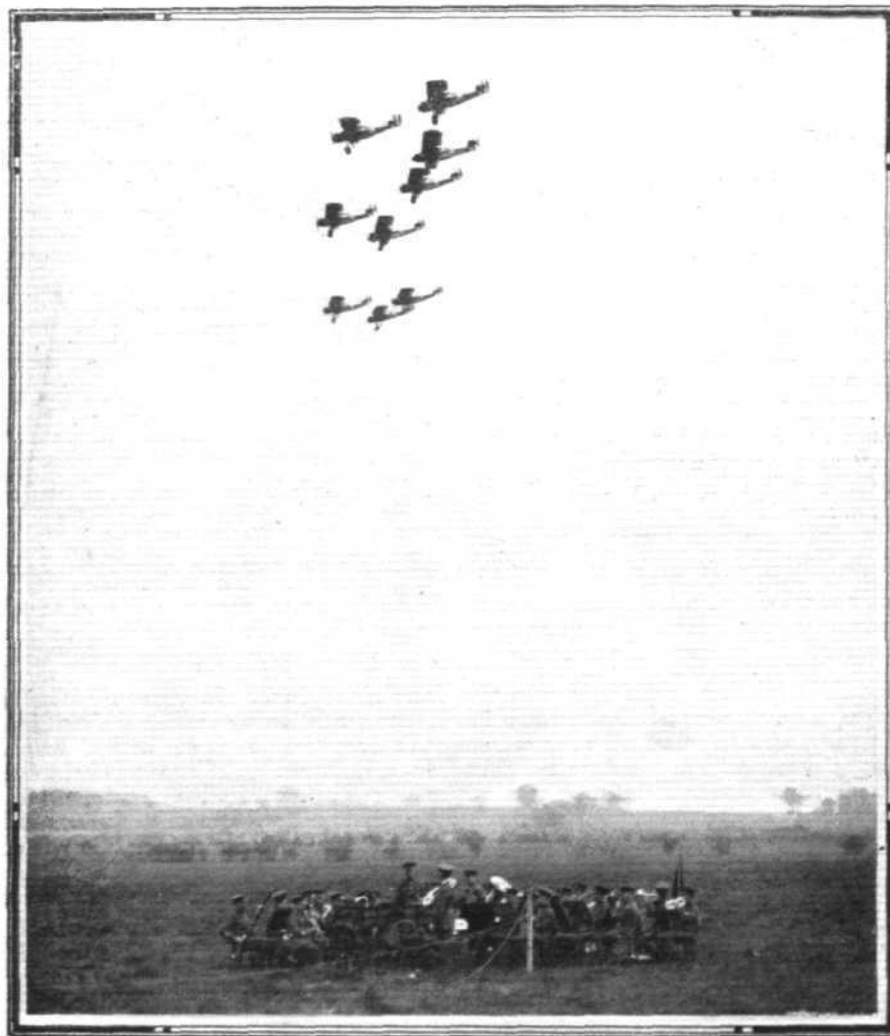
Flying Home from India : Airmen Missing

FLYING-OFFICER J. J. C. COCKS, No. 60 Bombing Squadron R.A.F., and L. Ac. Rowston, who started for England from Lahore in a privately-owned D.H.9 on May 11, left Konia at 2 p.m. on May 25 for Constantinople and nothing has been heard from them since. Inquiries have been made by the

Turkish authorities, and Bulgaria has been notified, as it is thought that they were lost or had changed their direction of flight. Konia is about 300 miles from Constantinople, and after leaving there they probably flew over part of the Salt Desert en route for Eski Shehr. As eleven days have now elapsed since their departure it is thought that a crash or forced landing would have been heard of.

Gp.-Capt. Williams Reports on Pacific Flight

IN the report of Group Captain R. Williams following his flight of 10,000 miles to the mandated territories and islands in the South Pacific for the purpose of surveying likely landing places, it points out that aviation development is fast bringing Papua, New Guinea, and the Solomon Islands within the range of important points on the Australian coast, and therefore they must be considered as possible future air bases both for an enemy and for Australia. It showed, too, that the east coast of Australia was not particularly suitable for either landplanes or seaplanes, though the preparation of



"FLIGHT" Photograph

A DRESS REHEARSAL : Our picture shows a formation of Siskins from No. 41 Squadron, led by Sq.-Ldr. F. Sowrey, practising, at Hendon, the "Musical Flight," which will form one of the features of the Royal Air Force Display on July 2. The band plays popular airs, which are transmitted by wireless to the pilots up above, who execute various evolutions to the music.

sites was feasible. Twenty-three places were visited, some of which had never been visited by an aeroplane before. Captain Williams and his two companions are included in the birthday honours list.

Proposed Air Service in French Indo-China

THE famous French aviator, Pelletier d'Oisy, will, it is believed, be called upon to organise shortly a commercial aviation service in French Indo-China. M. Varenne, the Governor of Indo-China, is thinking of creating a service which will link up Hawaii, Saigon, and Bangkok. When details have been worked out a technical adviser will be appointed who will probably be Captain Pelletier d'Oisy.

THE PRAGUE AERO SHOW

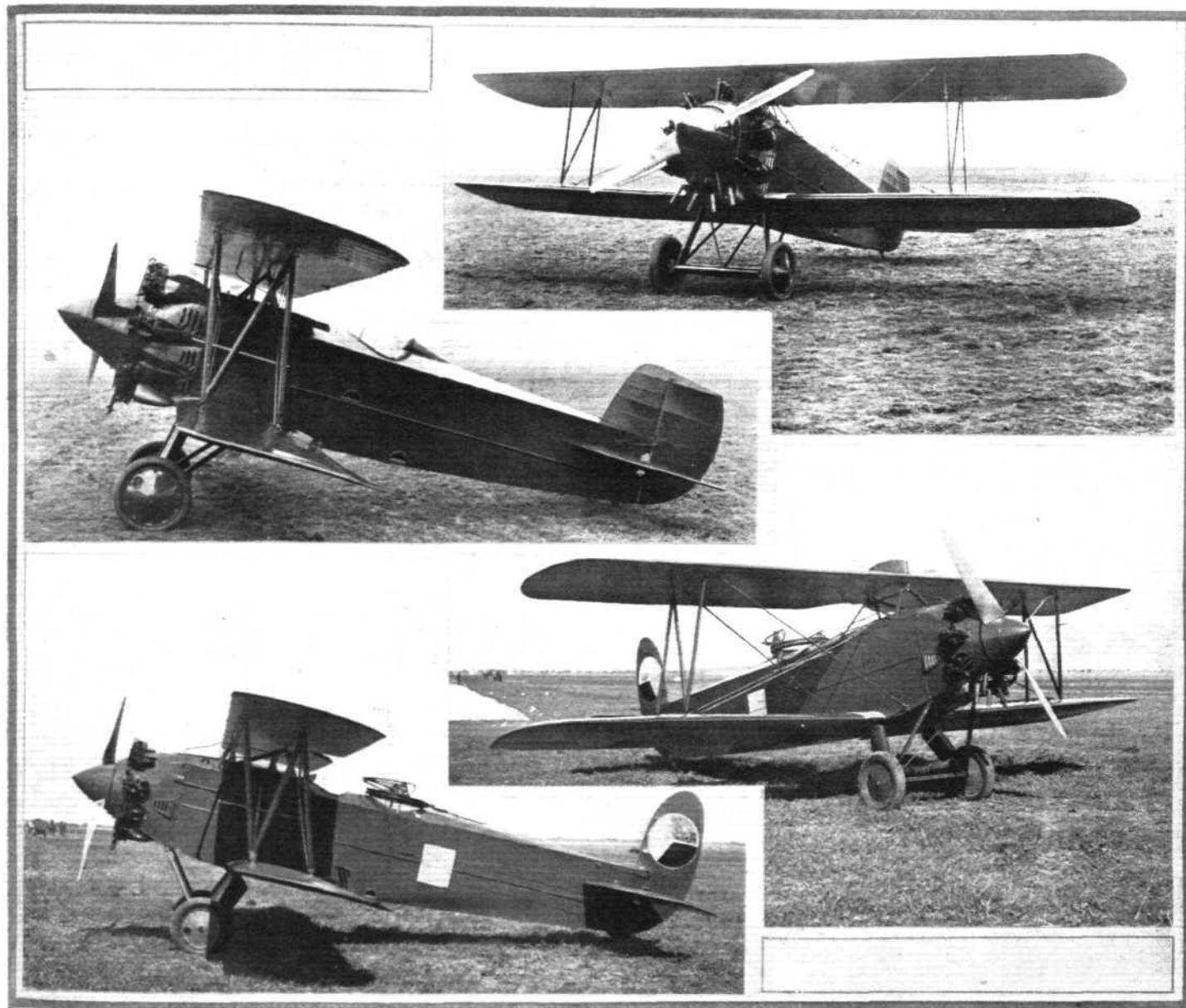
Some of the "Avia" Exhibits

QUITE the largest exhibit at the Prague Aero Show, which opened on June 4—and which remains open until June 16—is that of the well-known Czechoslovak firm, Miloš Bondy a Spol., whose "Avia" machines have attained such a successful reputation during the last few years. Some half-dozen or more different types of machines are to be seen on the "Avia" stand, from which, provided with the knowledge of the excellent performance claimed for each, it is apparent that versatility and sound design go hand in hand. With perhaps one exception these "Avia" machines are all new types, some being exhibited for the first time.

It is also somewhat gratifying, from our point of view, to

was 258 k.p.h. (160 m.p.h.), while that of the B.H.33 is 265 k.p.h. (164.3 m.p.h.).

To return to Prague, however, the various "Avia" machines exhibited include the following:—The famous B.H.11 low-wing monoplane (60 h.p. Walter) on which M. Bican won the Coppa d'Italia last year; B.H.20 (85 h.p. Walter), a single-seater biplane for advanced training; B.H.22 (180 h.p. Hispano), a similar but larger machine; B.H.25 (450 h.p. Lorraine), a 6-seater commercial passenger biplane; B.H.26 (Bristol "Jupiter VI"), a 2-seater fighter biplane; B.H.28 (385 h.p. Siddeley "Jaguar"), a 2-seater reconnaissance biplane; B.H.29 (85 h.p. Walter), a 2-seater primary training



AVIA MILITARY MACHINES AT PRAGUE AERO SHOW: At the top are two views of the B.H.33, a new single-seater fighter, and below are two views of the B.H.26, a two-seater fighter. Both are fitted with Bristol "Jupiter VI" engines.

find that half of these machines are fitted with British engines—in fact the "Avia" firm state that the unusually fine performance of their new machines has been gained mainly with the help of the Armstrong-Siddeley "Jaguar" and the Bristol "Jupiter" engines.

To digress for a moment, it may be of interest to mention here that one of the new "Avia" machines, the B.H.33 single-seater military fighter fitted with a Bristol "Jupiter," compared very favourably in performance with various other makes of similar type which have been taking part in a competition for single-seater fighters recently held in Roumania. For instance, the best time made by the competing machines for a climb to 5,000 m. (16,400 ft.) was 16 minutes, while the "Avia" B.H.33 reached the same altitude in 8½ and 9 minutes. Also, the highest speed made by the competing machines

biplane; B.H.33 (Bristol "Jupiter VI"), a single seater fighter biplane.

As regards the B.H.11, we need make little reference here to this machine, which should by now be well-known to readers of *FLIGHT*. For the benefit of those who are unacquainted with this machine, however, it may be mentioned that it belongs to the light 'plane class, being a low-wing monoplane fitted with a 60 h.p. Walter air-cooled radial engine. It is a two-seater intended for touring purposes, and is also used in the Czechoslovak Air Force as a messenger and advanced training machine. The B.H.11, it will be remembered, won the Orly and Coppa d'Italia competitions.

The B.H.20, which is a comparatively new machine, is a single-seater biplane fitted with an 85 h.p. Walter air-cooled radial engine, intended for advanced training—a "transition"



AT THE PRAGUE AERO SHOW: The Avia B.H.28 a two-seater reconnaissance biplane fitted with a 385 h.p. Armstrong-Siddeley "Jaguar," a close-up of which is shown on the right.

'plane for Scout pilots. It is a smaller and lower-powered version of the B.H.22, which is also a single-seater advanced training biplane, but fitted with an Hispano water-cooled engine of 180 h.p. This latter machine is developed from the B.H.21 fighter (300 h.p. Hispano), and has, in fact the same wings and fuselage. The wings are of the single bay type with N-struts, the top plane being in one piece and of slightly smaller span than the lower plane. The wings are of standard box-spar construction with plywood and fabric covering, while the fuselage is also of wood construction, consisting of four longerons, formers, and plywood covering.

The B.H.22 has a good performance—speed, 215 k.p.h. (133 m.p.h.), climb to 5,000 m. (16,400 ft.) in 22 mins.—which renders it particularly suitable for advanced fighter and stunt training; it is provided with a camera-gun. Furthermore, owing to its low stalling speed (below 80 k.p.h. or 50 m.p.h.) it is possible to use it in small aerodromes, etc.

As previously stated, the B.H.20 is similar, except as regards power, performance and size, to the B.H.22, and needs no further description other than the following figures:

B.H.20.—Span, 7.9 m. (26 ft.); wing area, 16.1 sq. m. (173.2 sq. ft.); weight empty, 330 kg. (727.6 lbs.); total

weight, 480 kg. (1,058.4 lbs.); speed range, 60–160 k.p.h. (37–99 m.p.h.); ceiling, 5,500 m. (18,000 ft.); range, 3 hrs.; factor of safety, 10.

While on the subject of training machines we may as well turn next to the B.H.29, which is a two-seater school machine (85 h.p. Walter), for primary training. In this new machine we find a thorough departure from standard Avia design. It is a biplane with staggered wings of orthodox wood and fabric construction, and a plywood fuselage. The wing area is large, giving a low wing loading—28 kg./sq. m. (5.7 lbs./sq. ft.)

Both wings are in two sections, and have the usual N-strut and wire bracing. The engine mounting is of steel tubing, with sheet cowling, and has 4-point attachment. A non-axle undercarriage is fitted, each wheel being carried by three struts, one of which embodies the rubber disc shock absorber. The main characteristics are:—

B.H.29.—Span, 9.8 m. (32 ft.); wing area, 25 sq. m. (269 sq. ft.); weight empty, 450 kg. (992.2 lbs.); total weight, 700 kg. (1,543.5 lbs.); speed range, 55–145 k.p.h. (34–90 m.p.h.); ceiling, 4,000 m. (13,120 ft.); range, 3½ hrs.; factor of safety, 10.

(To be continued)



AVIA MACHINES AT PRAGUE AERO SHOW: At the top (right) is the new B.H.25, a commercial passenger machine with 450 h.p. Lorraine engine. Below is the B.H.22, with 180 h.p. Hispano, an advanced training (fighter) biplane.

THE ROYAL AIR FORCE

London Gazette, May 31, 1927.

General Duties Branch

The following Pilot Officers promoted to rank of Flying Officer:—D. G. K. Walker (Mar. 21); C. S. Horne (Apr. 12).

The following Flying Officers are transferred to Stores Branch on probation (May 21): A. E. Evans, D.F.C., G. J. Gaynor, F. E. R. Dixon, M.C. The following officers are transferred to Reserve: Class A: Flight-Lieut. G. B. Holmes (May 31); Flying Officer E. Fulford (May 18).

Medical Branch

Medical Q.Mr. Flight-Lieut. E. Bennett is placed on retired list and granted permission to retain rank of Sqdn. Ldr. (May 30).

Reserve of Air Force Officers General Duties Branch

C. W. Harvey is granted comm. in General Duties Branch, Class A.A., as

Pilot Officer on probation (May 17); T. H. Worth is granted comm. in General Duties Branch, Special Reserve, as Pilot Officer on probation (May 19). The following Pilot Officers on probation are confirmed in rank: J. H. Gresham (May 26); L. S. Ash (May 30), Flying Officer C. K. Robinson is transferred from Class C to Class A (May 23); Flying Officer G. W. Smart is transferred from Class A to Class C (Mar. 11); Flying Officer A. B. Roche is transferred from Class B to Class C (May 21).

The following relinquish their commns. on completion of service: Flying Officer R. A. Coulthurst (Mar. 11); Flight-Lieut. G. N. Humphreys (Apr. 24); Flying Officer E. Bradley (May 27).

AUXILIARY AIR FORCE General Duties Branch

The following to be Pilot Officer: No. 603 City of Edinburgh (Bombing) Sqdn.—J. M. Fosbrooke (May 31).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Flying Officers: L. B. McGovern, to No. 24 Sqdn., Northolt, 3.5.27. G. P. Macdonald, to No. 24 Sqdn., Northolt, on appointment to a Short. Service Commission, 9.5.27. B. Cheeseman, M.B.E., S. D. Scott and G. E. Nicholletts, to Far East Flight, Felixstowe, 17.5.27. F. F. Inglis, to R.A.F. Depot, Uxbridge, 11.4.27. (Hon. Flight-Lieut.). L. P. Winters, to R.A.F. Depot, Uxbridge, 12.5.27. B. B. Dowling, to No. 4 Sqdn., S. Farnborough, 20.4.27.

Pilot Officers: W. G. Abrams, C. E. Chilton and R. S. Darbshire, to Marine Aircraft Experimental Establ., Felixstowe, 17.5.27. W. H. Shorter, to No. 13

Sqdn., Andover, 20.4.27. T. B. Byrne, to No. 1 Sqdn., Tangmere, 20.4.27. W. J. Pickard, to No. 13 Sqdn., Andover, 20.4.27. C. R. McEvoy, to No. 16 Sqdn., Old Sarum, 20.4.27. H. H. Martin, to Sch. of Tech. Training (Men), Manston, 20.4.27. B. M. Cary, to No. 16 Sqdn., Old Sarum, 20.4.27.

Stores Branch

Wing Commander E. W. Havers, to H.Q., Coastal Area, 29.4.27.

Squadron Leader W. B. Cushion, to Air Ministry, Directorate of Equipment 6.5.27.

Flight Lieutenants: A. T. Cooper, to the Packing Depot, Ascot, 27.5.27. W. C. Farley, to No. 22 Group, H.Q., Farnborough, 20.5.27. A. H. Comfort and E. L. Ridley, to R.A.F. Depot, Uxbridge, 9.4.27.

RYAN MONOPLANE—(concluded from p. 379.)

a speed of about 87 m.p.h. Finally, for the machine light, the mileage has become 2.29 miles per lb., at 67.5 m.p.h., corresponding to a consumption of 4.8 gallons per hour. The central set of curves in this set show gallons per hour against airspeed, and the right-hand curves miles per lb. of petrol against gross weight.

Another two sets of curves show engine revolutions per minute against airspeed for various gross weights, and engine revolutions per minute against gross weight.

The final curves, based upon those to which reference has been made, represent time plotted against distance, and airspeed and revolutions per minute plotted against distance. From the former it is seen that the duration is estimated to be 47.5 hours, while the range with no wind is 4,040 miles and with a following wind of 10 m.p.h. it is 4,490 miles. The distance from New York to Paris (3,600 miles) should be covered in 42 hours with no wind, and in 36½ hours with tail wind of 10 m.p.h. The actual time taken by Lindbergh tallied remarkably well with the estimated time, so that Mr. Hall's estimates must have been very accurate.

The way in which the most economical speed and revolutions per minute varied with distance is indicated in the central graph on p. 379, the curves on the left referring to the engine

revolutions per minute scale and those on the right to the airspeed scale. The "practical" engine revolutions drop from 1,660 r.p.m. at the start to 1,230 at end of New York-Paris distance, and the "practical" airspeed from 95 m.p.h. just after the take-off to 77 m.p.h. upon reaching Paris.

The information published above makes it abundantly clear that there was no guesswork about the flight of the "Spirit of St. Louis," and those newspapers which were inclined to regard Lindbergh as a "flying fool" were very wide of the mark, not only as regards the personality of the man himself but also concerning the way in which the whole flight had been planned. As far as was humanly possible to foresee, there was a wide margin in reserve, and with two provisos the flight was assured of success: The ability of the engine to keep running, and the capacity of Lindbergh to keep awake and to navigate his ship. Both proved equal to the task, and the rest of the story the world already knows. We do think, however, that at least one other factor in the equation of success deserves to be mentioned: The Duralumin propeller supplied by the Standard Steel Propeller Co. seems to have stood up well, in spite of the fact that 1,000 miles or so were flown in rain and sleet. We hope to learn more about this propeller later.

Royal Air Force Flying Accidents

THE Air Ministry regrets to announce that as the result of an accident at Littlewick, near Maidenhead, to a D.H. 9 machine of the Civil Flying School, Stag Lane, Edgware, on May 12, Flying Officer William Alan Foot, Reserve of Air Force Officers, the pilot and sole occupant of the aircraft, was killed.

Also, on the following day, that as the result of an accident at Henlow Aerodrome, Bedfordshire, to a Bristol Fighter of the Royal Air Force (Cadet) College, Cranwell, Flight Cadet Alfred Cyril Bentley, the pilot and sole occupant of the aircraft, was killed.

The Ministry also announces that Flying Officer (Honorary Flight-Lieut.) Richard Fenner Carter was severely injured and died later after an accident near Gosport Aerodrome in his Fairey IIID. machine when flying alone on May 13. Pilot Officer Arthur George Mace was also killed on May 16 at Sealand, Queen's Ferry, Chester, when flying an Avro of the No. 5 Flying Training School, Sealand. On the same day Pilot Officer Arthur Leslie Holden was severely injured and died later after crashing at Kenley, Surrey, in a Gamecock machine of the No. 32 Squadron, Kenley.

An Air Taxi for 1s. per Mile

It is announced that air "taxis" can now be hired to fly to any part of Great Britain and the Continent at the reduced rate of 1s. a mile. Lieut.-Col. G. P. Henderson, whose air garage is at Brooklands, has formed a fleet of two-

seater air "taxis" capable of flying at 75 to 80 m.p.h. at a charge of £4 an hour, or approximately 1s. per mile. When the first D.H. air "taxis" were introduced in 1919 the charge was 5s. a mile, which has steadily been reduced to 2s. a mile, this price remaining steady for some years now.

No. 20 Squadron Reunion Dinner

It is hoped to hold this Dinner again at Gatti's, on Saturday, July 2, at 8 p.m. Tickets, 12s. 6d. Would any past or present officers of No. 20 Squadron, who would like to attend please communicate with Mr. T. A. Metford Lewis, Postling, near Hythe, Kent.

Czechoslovak Aircraft in Bulgaria

THE Bulgarian Government recently gave the Aero Co. of Prague the power to erect an aircraft factory at Kazanlik on a site to be provided free of cost by the State. Its construction is to begin at once, and when completed it is to have an annual output of 100 machines, most of which the State will purchase for the first few years. The Turkish and Rumanian Press demanded that this proposal should be brought before the recent conference of the Little Entente at Joachimsthal, Czechoslovakia. It is not yet known whether the Rumanian Foreign Minister raised this question at the Conference, but even if he did it may be assumed that the Czechoslovak delegate would have defended the cause of a Prague firm and that he would have been supported by the Yugoslav delegate.

IN PARLIAMENT

Aeroplane Flights

MR. TREVELYAN, on June 1, asked the Secretary of State for Foreign Affairs whether, seeing that the Chinese Chamber of Commerce at Shanghai has protested to His Majesty's Minister to China against aeroplane flights over Chinese territory, he will state if these flights have been made over fortified areas and districts where fighting is progressing; and, if so, whether His Majesty's Government will issue instructions for the flights to be discontinued?

SIR A. CHAMBERLAIN: I have no information as to the reported protest from the Chinese Chamber of Commerce. The Naval Commander-in-Chief has been authorised to use his aircraft in whatever way he thinks most desirable for the defence of the International Settlement at Shanghai. It was foreseen that this might necessarily involve flights over fortified areas and districts where fighting is in progress.

MR. BECKETT: Is it the view of the right hon. Gentleman's expert advisers on air matters that aeroplanes can be used for defence in this way?

SIR A. CHAMBERLAIN: Yes, Sir. If it were not the view of those most competent to express an opinion, they would not be so used.

MR. BECKETT: Has it not been stated in this House, and in White Papers, again and again, that the only form of defence in the air is counter-attack?

SIR A. CHAMBERLAIN: The hon. Member misunderstands me.

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PERSONALS

Married

The wedding of MR. HENRY ADELBERT ANSON, R.A.F., second son of the Hon. Francis and Mrs. Anson, of 37, Princes Gardens, S.W., and MISS HILDA SUZANNE ALLEN, only daughter of Mr. and Mrs. S. C. Allen, of 39, Circus Road, St. John's Wood, took place at Holy Trinity Church, Brompton, on June 2. Flight-Lieut. W. F. Lickson was best man.

RICHARD STANLEY TOPHAM, Squadron-Leader, R.A.F./M.S. (retired), only son of the late Dr. A. S. Topham and Mrs. Topham, of Halifax, Yorks, was married on June 1, at the Parish Church, Enfield, to MARJORIE, eldest surviving daughter of Mr. and Mrs. ROLAND B. CHESSUM, of Enfield.

To be Married

The engagement is announced between Squadron-Leader ARTHUR LESLIE GREGORY, M.B.E., M.C., R.A.F., son of the late Mr. and Mrs. Arthur Gregory, and FRED MAUD, elder daughter of Mr. and Mrs. F. J. OAKLEY, of White Lodge, Bullington, Sutton Scotney, Hants.

An engagement is announced between MAJOR ARTHUR CLIFFORD HARTLEY, O.B.E. (late R.A.F.), of Glenville, Camberley, Surrey, elder son of the late Dr. and Mrs. G. T. Hartley, of Hull, and Miss NINA HODGSON daughter of the late Mr. W. E. Hodgson and of Mrs. Edward Dumoulin, of Ferriby Lodge, Northferriby, East Yorkshire.

The marriage arranged between MR. R. M. THOMAS, R.A.F., and Miss D.W. KNATCHBULL will take place on Tuesday, June 28, at Winsley Parish Church.

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NOTICES TO AIRMEN

International Aeronautical Maps, Baluchistan General Sheet

1. THE Baluchistan General Sheet (Provisional), G.S., G.S. No. 3803 of the International Aeronautical Maps, prepared in accordance with Annex F. of the International Air Convention is now on sale. The map is drawn on Mercator's projection to a scale of 1° of longitude equals 3 centimetres. The area covered is:—Latitude, 23° N. to 37° N.; longitude, 52° E. to 74° E. Topographical relief is shown by tints (layer system) in grey.

The map may be obtained through the usual agents, price 4s. (paper) and 4s. 6d. (linen backed).

AMENDMENTS TO BALUCHISTAN GENERAL SHEET

2. The following corrections should be made to the black plate of the Baluchistan General Sheet:—

(a) Insert Prohibited Area Symbols covering the following territories:—
(i) The Administered Districts and Political Agencies of the North-West Frontier Province. (ii) The areas in British Baluchistan and the Baluchistan Agency lying to the north of line 26° 20' north latitude.

(b) Delete W/T symbols from Bundar Abbas and Charbar.

(c) Delete letter S from Lingeh, Bunder Abbas, Jask and Charbar.
No. 41 of 1927.

Examination for Air Navigators

An examination for 1st and 2nd Class Air Navigators' licences will be held at the Air Ministry, Gwydyr House, Whitehall, on Monday and Tuesday, June 27 and 28, 1927.

Application forms, the syllabi, and conditions of examination, may be obtained on application to the Secretary, Air Ministry (C.A.2), Gwydyr House, Whitehall, London, S.W.1.

Formal applications to sit at this examination should be received at the above address not later than June 20, 1927. Candidates should give with their applications full details of any qualifications and experience they already possess.

Before a licence can be issued, candidates will have to pass a medical examination at the Central Medical Board, 5/7, Clements Inn, London, W.C.2. Arrangements can be made for this examination to take place on June 29, 1927, if candidates make early application to be examined on that day.

No. 42 of 1927.

Watchet Anti-Aircraft Artillery Range

It is notified:—

1. Anti-aircraft artillery practice which takes place at Watchet forms a danger to aircraft when flying above the area described below.

2. Pilots should therefore avoid this area, as no liability for accidents arising to aircraft as a result of such artillery practice will be admitted.

3. No special warning signals for aircraft will be displayed, but the usual flag signals, etc., as indicated, will be employed whenever firing is taking place.

4. DETAILS.—Description and Position.—An area comprising an irregular segment of a circle enclosed on the seaward side between the radii, approximately, 6 miles in length, bearing 289° True and 70° True, respectively, and having as their centre a point approximately 1½ miles E. of Watchet, Somersetshire. The centre of this area is situated 8 miles E.N.E. of Minehead, in Latitude 51° 13' N., Longitude 3° 18' W.

Programme of Firing.—From June 25, daily until September 11, 1927.

Warning Signals.—Red flags by day, and groups of three red lights, arranged in vertical line, by night.

(No. 43 of 1927.)

PUBLICATIONS RECEIVED

Aeronautical Research Committee, Reports and Memoranda: No. 1060. (Ae. 243).—Flying Positions of Control Surfaces of Bristol Fighter. By Capt. G. T. R. Hill, M.C. May, 1926. Price 6d. net. No. 1068 (Ae. 250).—The Full Scale Determination of the Lateral Resistance Derivatives. By H. M. Garner, M.A. September, 1926. Price 3d. net. H.M. Stationery Office, Kingsway, London, W.C.2.

Air Force Songs and Verses. The Royal Air Force Memorial Fund, 7, Idlesleigh House, Caxton Street, Westminster, S.W.1. Price 2s. post free.

Report on the Health of the Royal Air Force for the Year 1925. H. M. Stationery Office, Kingsway, London, W.C.2. Price 3s. net.

Abhandlungen aus dem Aerodynamischen Institut an der Technischen Hochschule Aschen. Julius Springer, Linkstrasse 23-24, Berlin. Price R.M. 7.50.

The Royal Air Force Rifle Association: Rules and Programme, 1927. Royal Air Force Rifle Association, R.A.F. Cadet College, Cranwell, Lincs.

The Accessory. Vol. 13. No. 136. April, 1927. Brown Brothers, Ltd., Great Eastern Street, London, E.C.2.

Monthly Journal of the British Chamber of Commerce in the United States of America. Vol. VII. No. 4. April, 1927. British Chamber of Commerce in the United States of America, 25, Broadway, New York, U.S.A.

U.S. National Advisory Committee Reports. No. 248.—The Corrosion of Magnesium and of the Magnesium Aluminium Alloys Containing Manganese. By J. A. Boyer. No. 251.—Approximations for Column Effect in Airplane Wing Spars. By E. P. Warner and Mac Short. No. 252.—The Direct Measurement of Engine Power on an Airplane in Flight with a Hub-Type Dynamometer. By W. D. Gove and M. W. Green. No. 253.—Flow and Drag Formulae for Simple Quadrics. By A. F. Zahm. No. 254.—Distribution of Pressure over Model of the Upper Wing and Aileron of a Fokker D-VII Airplane. By A. J. Fairbanks. No. 255.—Pressure Distribution over Airfoils at High Speeds. By L. J. Briggs and H. L. Dryden. No. 256.—The Air Forces on a Systematic Series of Biplane and Triplane Cellule Models. By Max M. Munk. National Advisory Committee for Aeronautics, Washington, D.C., U.S.A.

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(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

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